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THE CARE OF STEAM BOILERS.

The following is from a sheet of instructions to boiler attendants recently issued by the Manchester Steam Users' Association.

GETTING UP STEAM.—Warm the boiler gradually. Do not get up steam from cold water in less than six hours. If possible, light the fires overnight. Nothing turns a new boiler into an old one sooner than getting up steam too quickly. It hogs the furnace tubes, leads to grooving, strains the end plates, and sometimes rips the ring seams of rivets at the bottom of the shell.

FIRING.—Fire regularly.—After firing open the ventilating grid in the door for a minute or so. Keep the bars covered right up to the bridge. Keep as thick a fire as the quality of the coal will allow. Do not rouse the fires with a rake. Should the coal cake together, run a slicer in on top of the bars and gently break up the burning mass. It has been found by repeated trials that under ordinarily fair conditions no smoke need be made with careful hand firing.

CLEANING FIRES AND SLACKING ASHES.—Clean the fires as often as the clinker renders it necessary. Do not slack the clinkers and ashes on the flooring plates in front of the boiler, but draw them directly into an iron barrow and wheel them away.

FEED WATER SUPPLY.—Set the feed valve so as to give a constant supply, and keep the water up to the height indicated by the water level pointer. There is no economy in keeping a great depth of water over the furnace crowns, while the steam space is reduced thereby, and thus the boiler rendered more liable to prime. Nor is there any economy in keeping a very little water over the furnace crowns, while the furnaces are thereby rendered more liable to be laid bare.

GLASS WATER GAUGES AND FLOATS.—Blow through the test tap at the bottom of the gauge hourly, as well as through the tap in the bottom neck, and the tap in the top neck twice daily. These taps should be blown through more frequently when the water is sedimentary, and whenever the movement of the water in the glass is at all sluggish. Should either of the thoroughfares become choked, clean them out with a wire. Work the floats up and down by hand three or four times a day to see that they are quite free. Always test the glass water gauges and the floats thoroughly the first thing in the morning before firing up.

BLOW-OUT TAPS AND SCUM TAPS.—Open the blow-out tap in the morning before the engine is started, and at dinner time when the engine is at rest. Open the scum tap when the engine is running, before breakfast, before dinner, and after dinner. If the water be sedimentary, run down half an inch of water at each blowing. If not sedimentary, merely turn the taps round. See that the water is at the height indicated by the water level pointer at the time of opening the scum tap. Do not neglect blowing out for a single day, even though anti-incrustation compositions are put into the boiler.

SAFETY VALVES.—Lift each safety valve by hand in the morning before setting to work and see that it is free. If there is a low water safety valve, test it occasionally by lowering the water level to see that the valve begins to blow at the right point. When the boiler is laid off, examine the float and level to see that they are free, and that they give the valve the full rise. If safety valves are allowed to go to sleep, they may get set fast.

SHORTNESS OF WATER.—In case the boiler should be found to be short of water, draw the fires if practicable, and draw them quickly, beginning at the front. In some cases it may be more convenient to smother the fires with ashes or with anything else ready to hand. If the fires are not drawn leave the furnace doors open, turn on the feed, lower the dampers, shut down the stop valve if the boiler be one of a series, and relieve the weight on the safety valves so as to blow off the steam. Warn passers-by from the front of the boiler.

USE OF ANTI-INCRUSTATION COMPOSITIONS.—Do not use any of these without a thorough knowledge of their effects. If used never introduce them in heavy charges at the man hole, or safety valve, but in small daily quantities along with the feed water.

EMPTYING THE BOILER.—Do not empty the boiler under steam pressure, but cool it down with the water in; then open the blow-out tap and let the water pour out. To quicken the cooling the damper may be left open, and the steam blown off through the safety valves. Do not on any account dash cold water on to the hot plates. But in cases of emergency, pour cold water in before the hot water is let out, and mix the two together so as to cool the boiler down gradually and generally, and not suddenly and locally.

CLEANING OUT THE BOILER.—Clean out the boiler at least every two months, and oftener if the water be sedimentary. Remove all the scale and sediment as well as the flue dust and soot. Show the scale and sediment to the manager. Pass through the flues, and see not only that all the soot and flue dust have been removed, but that the plates have been well brushed. Also see whether the flues are damp or dry, and if damp find out the cause. Further, see that the thoroughfares in the glass water gauges and in the blow-out or scum pipes, as well as the thoroughfares and the perforations in the internal feed dispersion pipe and the scum pipes are free. Take the feed pipe and scum troughs out of the boiler if necessary to clean them thoroughly. Take the taps and the feed valves to pieces; examine, clean, and grease them, and if necessary grind them in with a little fine sand. Examine the fusible plugs. Do not put any blocks under the pipes in the hearth pit.

PREPARATION FOR INSPECTION.—Have the boiler cooled and carefully cleaned out as explained above. Show both scale and sediment to the inspector, as well as the old cap of the fusible plug, and tell him of any defects that may have manifested themselves

in working, or of any repairs or alterations that may have been made since the last examination.

FUSIBLE PLUGS.—Keep these free from soot on the fire side, and from incrustation on the water side. Change the fusible metal once every year, at the time for preparing for annual examination.

GENERAL KEEPING OF BOILER. Polish up the brass and other bright work in the fittings. Sweep up the flooring plate frequently. Keep water out of the earth pit below the flooring plates. Keep the floor on the top of the boiler free, and brush it down once or twice a week. Take a pleasure in keeping the boiler and the boiler house clean and bright, and in preventing smoke

THE BRUSH ELECTRIC LIGHT.

The ancient saw about the share of milk obtained by the still sucking seems to be pretty well borne out in the progress of the brush system of electric lighting. A dozen systems, so-called, have made more noise and have attracted more newspaper attention; but while they are for the most part still "promising," the Brush system has been quietly taking possession of the field. How far this is due to the superior business management of the company controlling the Brush patent it is impossible to say; the indications are, however, that the remarkable success of the brush system is mainly due to the practical genius of Mr. Brush in meeting the requirements of outdoor or large room lighting with an efficient generator, and a lamp which is so simple in construction so automatically regular in action, and so easy to keep in order, that practical business men can afford to use it. It is perhaps the least ornamental in appearance of all lamps, but it gives the light required, and calls for comparatively little care. On the score of economy the users of the lamp profess to be well satisfied, and the rapid and largely extended adoption of the system, abroad as well as at home, would seem to justify the favourable judgment which those who have tried the lamp have freely expressed with regard to its practical value.

The latest list of prominent users of the Brush light embraces twenty-five rolling mills, iron and steel works, machine shops, car works, and the like; twenty saw mills, paper mills, oil works, printing houses, and other factories and manufacturing establishments; twenty woollen, cotton, linen, and silk factories, several of them employing over a hundred lights each, a dozen tin-smelting works, etc., more than a dozen wholesale and retail stores, using from six to sixty-four lights; a dozen public parks, docks, summer resorts, and the like, including a mile and a half of river front and docks at Montreal, circuses, colleges, hotels, steamers; and large numbers of city lights in San Francisco, St. Louis, Chicago, Cleveland, Detroit, Grand Rapids, and other cities besides New York and Brooklyn, where a hundred or more lights are already in use. The contracts of the company in San Francisco called for the erection of about

a thousand lamps by the beginning of the current year. Wabash, Indiana, claims the credit of being the first large town to adopt the electric lamp for general illumination, four Brush lights, of 3,000 candle power each, on the court house dome, sufficing for the outdoor needs of the entire town of 10,000 inhabitants.

The company formed in London to introduce the Brush light there have already placed two hundred lights in various parts of the city, and have ordered from Cleveland nearly as many more, contracts having been signed for the lighting of the Houses of Parliament, Charing Cross Station, Ludgate Hill Station, Blackfriars' Bridge, St. Paul's Churchyard, and other conspicuous places. Even the extremely conservative British Admiralty has taken kindly to the Yankee invention, 432 lights have been purchased for the use of the Royal Navy. Mr. Brush is now making a 40-light machine (80,000 candles) designed to throw the entire current into one huge lamp, which has been ordered for the British torpedo service. The carbons for this artificial sun will be as large as a man's arm, and the light, when directed by a projector of corresponding size, will of itself be a formidable weapon of defense. With a proper system of curtains it will be possible to flash upon an approaching enemy a sudden glare of light that will be little less than blinding.

A less imposing but more admirable application to this light, and one that is being rapidly adopted, is in connection with locomotive headlights. The generator is operated by a small engine taking steam from the boiler and placed opposite the air compressors of the Westinghouse breaks. By attaching the reflector to the forward truck the light may be thrown so as to illuminate the track ahead even when rounding curves. It is obvious that the same machine which supplies the headlight will also furnish a current for illuminating the cars.

Wherever the electric light has been brought into competition with gas for lighting large rooms or open spaces, it has given a good account of itself in comparisons of cost. In very many cases, however, any comparison with gas is out of the question. With gas it is simply impossible to do certain kinds of work at night, or to do it as rapidly and well as by daylight. With the electric light night production is brought up to the level of day production. The gain of one night's increased production will often pay the cost of electric lighting for months. Practical business men are not slow to appreciate advantages of this sort. The question with them is how much will the electric light cost, but can the light be depended on for a steady, uniform, certain operation, without requiring too much expert attention? The ability of the Brush lamp to meet such practical requirements would seem to be the secret of its substantial progress.—*Scientific American.*

A sale of over 100,000 feet of lumber was recently made at Ottawa to be shipped by way of Brockville.

Under Fire.

A SOLDIER'S SENSATIONS WHEN ENGAGED IN BATTLE.

(Detroit Free Press.)

Whenever you can find a soldier who, under fire, aims low and shoots to make every bullet wound or kill, you will find fifty who are nervously throwing away ammunition, assuming to reason that the reports of their muskets will check or drive the enemy. And yet this nervousness need not be wondered at, for they are playing a game of life and death.

At Malvern Hill, seventeen soldiers, belonging to an Ohio regiment, took cover in a dry ditch, which answered admirably for a rifle pit. A Georgia regiment charged this little band three times, and were three times driven back. The fire was low and rapid, and the loss in front of their guns was more than one hundred killed in ten minutes. Regiments have been engaged for an hour without losing over half that number. The fire of those seventeen was so continuous that McClellan forwarded a brigade to their support, believing that an entire regiment had been cut off.

At Mine Run the writer was just in the rear of a New York regiment which was suddenly attacked. A single company of confederates, cut off from the regiment and dodging about to rejoin it, suddenly debouched into a field and found itself face to face with the union regiments. Fighting commenced at once. A regiment fought a company, both lying down from cover. I lay so near a third sergeant that I could touch his heels, and I watched his fire. Every time he pulled the trigger he elevated the muzzle of his gun at an angle of forty-five degrees instead of depressing it for the enemy lying down. I saw him repeat this operation fourteen different times. The man next to him fired as many bullets plump into a stump in his front, and the man on the other side shot into the ground about ten feet away. Others must have been wasting bullets about the same way; but that little company was shooting to kill. In that ten minutes of fighting the New Yorkers suffered a loss of thirty-six killed and wounded, and then a bayonet charge doubled their back and opened a gap for the little band's escape. I walked over the ground and found one dead and one wounded confederate. Not a gun, blanket, knapsack or canteen had been left behind.

Any soldier will no doubt fight better under cover than he will in the open field, but cover does not always insure good fighting. At Pittsburgh Landing five thousand union soldiers skulked under the river bank, safe from the enemy's fire, and many of them threw their guns into the river rather than fire a shot. Again, at Yellow Tavern, five of Custer's men, dismounted and lying behind a fence, held five companies of cavalry at bay for twelve minutes, and killed twenty-four men, and this without getting a scratch in return.

At Mine Run a union regiment went into the fight with sixty rounds of ammunition per man, making a total of perhaps four thousand bullets. This regiment was placed to act as a check to any advance of the enemy in a certain direction. They did not see thirty confederates during the whole day, and yet it was twice more supplied with ammunition. It fired away at least twelve thousand bullets, and yet only killed two rebel skirmishers.

One cool man will do more execution with his musket than thirty men firing at random. One must have a will strong enough to crowd down all emotions, and oblige his hands to cease trembling at the word. Out of every regiment, not more than one hundred men were fighters. These shot to kill. The others shot at random, and killed only by accident. Thirty cartridges would last a good fighter for an all day's fight. The ordinary soldier would fire out his sixty in an hour and a half, and like enough have his eyes shut half the time when he pulled the trigger. A member of the 2d. Michigan infantry hit the case pretty well at Blackburn Ford. When the skirmishing began he counted his cartridges, and said:

"Just sixty of 'em, and I'll fire three a minute, and have these fellers licked in just twenty minutes to a tick!"

THERE WAS a fight imminent between two boys. One of them darkly hinted that he was bigger than the other. The smaller, who is the son of a deacon, defiantly retorted: "I don't care if you are as big as a church debt; you can't scare me.

Sparrows in a Winter Bath.

Yesterday, during the sunny hour of noon, says the Hartford "Times," a flock of about a hundred English sparrows gathered upon and near a painted tin roof having a protected southern exposure, where a good deal of water had collected in the broad flat gutter. The temperature of the surrounding air was about six degrees below the freezing point, and water was evidently a scarce article, for the eager little birds rushed for it almost furiously. They dashed in by the dozen, fluttering their wings and tails, and sending the shower of water in a spray round. A dozen now-comers would be actually fighting for precedence. As fast as they finished their bath the birds went to the upper slope of the roof, next the sheltering brick wall of a higher part of the building, and there spread themselves out in the sun, like hens shuffling in a warm sand-bath, spreading out their feathers and turning themselves first on one and then on the other side. One sparrow evidently had his misgivings about taking a plunge into a winter bath; he stood shivering at the edge of the pool, like an undressed boy on the river's bank when he hesitates to take the first plunge of the season. Some of his more venturesome companions tried to push the bird in. One seized him by the tail and pulled; another fluttered his wings against him and tried to crowd him in; and a third tried to operate on his head. It was in vain; that particular bird, though seemingly desirous of a bath, evidently mistrusted the temperature of the water—or his own sanitary powers of resistance in these malarial times, and he wouldn't budge. His companions, to the number of about sixty, then gave it up and crowded together in their selected position of shelter, as closely, seemingly, as swarming bees, making a pretty sight. The social and gregarious characteristics of these sparrows are strongly marked. But they fail to find, in this country, the thatched cottage roofs, and the wheat and barley ricks, in which they are so naturally prone to burrow in English rural districts.

Lord Beaconsfield and Thackeray

Much bitterness, says a London paper, has been excited in some quarters by Lord Beaconsfield's caricature of Thackeray, whom the great satirist's admirers profess to identify beneath the traits of St. Barbe, the journalist in "Entomion." The uncomplimentary sketch is thought to be intended as the ex-premier's revenge for Thackeray's burlesque novel of "Collingsby." The likeness in the case as in all other cases, has been purposely distorted so as to leave room for a denial by the noble author that any portrait was intended; but everybody recognizes the original. Gushy, the rival of whom St. Barbe is always talking despairingly, is taken to be Dickens. Lord Beaconsfield has undertaken to throw people off the scent by amalgamating their characters—thus Vixie is made to be a combination of Poole, the tailor, and of Geo. Hudson, the Sunderland railway king, once omnipotent in English society, but who died in comparative obscurity some years ago. This artifice, however, will not save him from severe attacks by the wrathful friends of Thackeray and Dickens.

The Cost to France of the War with Germany.

An astounding statement as to the cost of the war between France and Germany, and of the devastation caused by the Commune, has appeared in the *Economiste Francais*. The writer, M. de Foville, whose official position gives him every opportunity of testing the accuracy of the statement, considers it as being on the whole rather below than above the truth, and that £600,000,000 sterling would be near the mark. Of this the indemnity to Germany absorbs £212,000,000. If there is anything more wonderful than the statement itself, it is the rapidity with which France has recovered from this terrible infliction.

At a negro prayer meeting, one of the brethren earnestly prayed that they might be preserved from what he called their "upsettin' sins." "Brudder," said one of the elders, "yer han't 'zactly got do hang ob dat ar word. It's besettin'—not upsettin'." "Brudder," replied the corrected, "ef dat's so, it's so; but I was prayin' do Lawd ter save us from do sin of 'toxication, an' of dat ain't a upsettin' sin, I dunno."

Remarkable Remedies.

(From Chambers's Journal.)

Sir Walter Scott's piper, John Bruce, spent a whole Sunday selecting 12 stones from 12 south-running streams, with the purpose that his sick master might sleep upon them and become whole. Scott was not the man to hurt the honest fellow's feelings by ridiculing the notion of such a remedy proving of avail; so he caused Bruce to be told that the receipt was infallible; but that it was absolutely necessary to success that the stones should be wrapped in the petticoat of a widow who had never wished to marry again; upon learning which the Highlander renounced all hope of completing the charm. Lady Duff Gordon once gave an old Egyptian woman a powder wrapped in a fragment of the *Saturday Review*. She came again to assure her benefactress the charm was a wonderfully powerful one; for although she had not been able to wash off all the fine writing from the paper, even that little had done her a great deal of good. She would have made an excellent subject for a Llama doctor, who, if he does not happen to have any medicine handy, writes the name of the remedy he would administer on a scrap of paper, moistens it with his mouth, rolls it up in the form of a pill, which the patient tosses down his throat. In default of paper, the name of the drug is chalked on a board, and washed off again with water, which serves as a healing draught. These easy-going practitioners might probably cite plenty of instances of the efficiency of their method. Dr. John Brown, of Edinburgh, once gave a labourer a prescription, saying: "Take that, and come back in a fortnight, when you will be well." Obedient to the injunction, the patient presented himself at the fortnight's end, with a clean tongue and a happy face. Proud of the fulfilment of his promise, Dr. Brown said: "Let me see what I gave you." "Oh," answered the man, "I took it, Doctor." "Yes. I know you did; but where is the prescription?" "I swallowed it," was the reply. The patient had made a pill of the paper, and faith in his physician's skill had done the rest. Faith is a rare wonder-worker. Strong in the belief that every Frank is a doctor, an old Arab, who had been partially blind from birth, pestered an English traveler into giving him a seidlitz powder and some pomatum. Next day the chief declared that he could see better than he had done for 20 years.

Prince Gortschakoff.

"Among the celebrities in Baden-Baden," says a correspondent, "that I see promenading nearly every hour in the day, perhaps there is none more noted or that has a more world-wide reputation than Prince Gortschakoff, who was so long the Imperial Chancellor of Russia, and who for many years controlled a greater influence on European politics than any other man living. He also is passing into the serene and yellow leaf. He is upward of 80, and his silver locks and tottering step give evidence that he is nearly ready for the great harvest of old. Old age has unfitted him for further use or influence in the Russian Cabinet, and he is like an old war horse that has been discarded from active duty after years of hard work in his country's service. He spends the summer months in Baden-Baden and the winters in Southern France or Italy, having ignored Russia as a place of residence. Report says that his mind has become weak and childish, and that he constantly mourns over the ingratitude of his country in not reinstating him in power as in days gone by."

SOME REASONS FOR DRINKING.—An illustration of fertility of resource is recounted, we think by Dean Rameay, in the story of the dying rustic who "speered" at the parish minister if there would be any whisky in heaven. On being rebuked for this mundane anxiety and irreverent curiosity, Sandy replied in self-excuse: "That it wasna because he wad tak ony if it were speered him, but jist in respect that it wad look weel on the table." We have not forgotten that Highland teetotaler who was found drinking the mountain-dew at his breakfast in some wayside inn where he thought he would not be known. "Och, Donald, and we thoct ye were an abstainer!" exclaimed a Deacon who happened to look in quite unexpectedly. "And so I am," replied the detected culprit, who scorned to suggest that his beverage was only toast-and-water—"so I am; but ye ken, my frien', I am no a bigoted ane."

Irish Titles.

The intelligent foreigner may surely be excused if he owns himself fairly bewildered and perplexed to find a key to the full meaning of half the abbreviations of titles and dignities he comes across in the newspaper any one morning in the week. But in Ireland the problem is still more vexed and involved than it is here. The habit of publishing a man's titles to distinction or respectability is carried to far greater lengths there than it is on this side of St. George's Channel; and there must be many cabalistic letters crowded in close succession after an Irishman's name which must be wholly unintelligible to the ordinary Englishman. He can understand the meaning of J. P. and D. L., although the social position of a magistrate or a Deputy Lieutenant is not habitually advertised with us on all occasions; but he may not that know P. L. G. stands for Poor Law Guardian—an official of some importance in the present day in Ireland—or that T. C. is a handle that may be equally worn by a member of Trinity College, Dublin, and a Town councillor. The latter, however, would consider himself seriously ill-used if it were not given him on all occasions; and so would a member of the Royal Irish Academy if the letters "M. R. I. A." were not always appended to his name. At a very early period Catholic clergymen adopted the letters "C. C." (Catholic Curate), and "P. P." (Parish Priest, in order to distinguish themselves from the heretical ministers of the once Established Church; while "R. M." in Ireland does not stand for Royal Marines, but is used to separate the resident magistrate—answering to the stipendiary magistrate of our great towns—from the army of the "great unpaid." The curious depreciation of things Irish which characterizes even the "National" Irishman contributes to swell the number of these verbal puzzles, a member of the Royal College of Veterinary Surgeons of England being anxious to let every one know that he did not get his diploma in Dublin. And so this rage for some letter after the surname bites men of all ranks and all ages, and the humblest Irishman who has not been be-lettered while living may safely count on "R. I. P." being penciled on his tombstone.

Married in Defiance of the Court.

(From the London Telegraph.)

Indulgent public opinion might have recorded a unanimous verdict of acquittal in the case of the audacious young man who took upon himself to run away with and marry a ward in Chancery, had it not been for the very reprehensible course he thought fit to adopt in misrepresenting the young lady's age to the clergyman who sealed the nuptial bond. She was 22, he averred, whereas she turned out to be only 19; and, to add to the enormity of his offense, he further represented himself to have slept for three weeks in a parish which he had, as a fact, only honoured by a perfunctory sojourn of a single night. As Vice-Chancellor Malins pointed out, there is a lamentable laxity about a system which enables two romantic young people, neither of them past legal infancy, to get married by making false declarations of age, with no further questions asked. In the case of Mr. Metzgar, who perpetrated this particular fraud upon the cleric, he had been previously prohibited by the Court of Chancery from holding any communication whatever with the object of his affections; so when he deliberately carried her off and married her, his conduct may have had a touch of romance about it, but it was quite certain to receive punishment. The marriage is now valid, but the unfortunate bridegroom is in prison, a victim to the offended dignity of the Court of Chancery and only after a period of jail discipline and the humblest apologies is there any chance of his being liberated. It is quite right that the Chancery Judges should keep a very sharp eye on the doings of infants, as they are the official guardians of all minors in the country, as well as those who, by virtue of their fortunes, are in the peculiar condition of "Wards of Court;" but it may be hoped that the amorous desperation which has landed the unfortunate bridegroom in a jail will carry him cheerfully through his confinement, and restore him afterward—a wiser, if a sadder man—to the society of his ill-won bride.

It is the confession of a widower who has been thrice married that the first wife cures a man's romance; the second teaches him humility; the third makes him a philosopher.

The Knight of Ravenscrag.

The "The Celebrity at Home" Sketch of Sir Hugh Allan.

James street, Liverpool, the broad thoroughfare leading from St. George's Church to the docks, is a street among streets. From earliest dawn lorries laden with huge bales of cotton or larger hogsheads of sugar, light carts with their Irish drivers indispensable to the seaport but the terror of its inhabitants, and the four-wheeler with Jack ashore, and "his cousins and his aunts" toil up, or rather down, it. On the one side are grim and many-storied warehouses; on the other less impressive hostleries much affected by master mariners. Of the former, the central and principal building presents the facade of an Italian palace pierced with five windows on either side of the granite pillared entrance. This is the counting house of the "Allan Line," a name so familiar in Liverpool as the landing stage or the Town Hall, and to the Canadian more than a household word, since it represents the link that binds the Dominion to the Mother Country. And it is something more than name. Modest in its origin, starting with two vessels only, and at one time threatened with extinction through unparalleled misfortune. The Allan Line of steamships rivals in importance the Cunard or the P&O and Oriental, and differs from these companies in being the largest and finest fleet that is retained in private hands. It belongs entirely to the firm of Allan Brothers & Co., and has feeders in its complement of sailing clippers, and in the connecting lines of railways and of lake navigation, the control of which centres in the same hands. It possesses, too, a reputation for comfort and safety which induces many travellers to give it the preference as a route to the States. Its aim, however, is to benefit the Dominion, and thus it comes about that the names of Canada and the Allan Line are inseparable.

This vast carrying trade, like all other successful enterprises, has one directing genius. A man who does not obtrude himself on the public, yet unmistakably a man in a thousand and a man of the times, is Sir Hugh Allan, the founder of the line, and the head of the firm. He is at once the richest and most influential citizen of his adopted country, for Sir Hugh is, of course, a Scotchman, typically sagacious and indomitable. Within a year of the allied span there is about him the unmistakable air of power. Ago has scarcely impaired the elasticity and vigour of the massive frame; it has but emphasized the resolution expressed in the lines of the face. Physical power and mental capacity—this is the combination, rare as it is admirable.

Like all men who have seen the world, Sir Hugh is a practical cosmopolitan, as much at his ease in the Grand Hotel at Charing Cross, or in the Liverpool offices, as in the streets of Montreal, and thinking as little of a run across the Atlantic as a Londoner does of a trip to Brighton. Nevertheless there is something in the tone of the greeting which meets you on the broad terrace overlooking the mighty St. Lawrence that says unmistakably, "Here I am at home."

"Ravenscrag," a massive pile of roughly hewn granite, rises boldly from the side of the Royal Mountain which gives the city its name. The walls are of enormous thickness, and well calculated to withstand the extremes of temperature incidental to the climate. Its twelve acres of garden and shrubbery are surrounded by the celebrated Park of Montreal. The view from the terrace can scarcely be surpassed. At your feet lies the city, with its trees, shaded avenues, and streets, its handsome public buildings and innumerable spires. Beyond it flows the great river, here two miles wide, crowded with shipping of all nationalities, and spanned by the world-renowned Victoria bridge; whilst the fertile plains of Vermont stretch away to the distant horizon. Within the house a suite of drawing-rooms leads through a noble ball-room to extensive conservatories in which it is easy even in the depth of a Canadian winter to imagine oneself in the tropics. The great central chamber with its parquet floor of native woods is often the scene of triumphs in dress, beauty, and flirtation. It is the boast of the colony that the "Blue noses," as some would call them, or the Dominion belles as they are properly named—for the former term is rather local than generic—are the best looking women in the world.

But the library, with its dark, solid furniture, large open fireplace, and providing

air of quiet comfort, is the room of the house. Here, after the day's toil, Sir Hugh spends a couple of hours in relaxation, a game of whist with some of the members of his family—his children number a round dozen—or with the chance visitor. It is, too, the scene of work as well as play, for it has been for years Sir Hugh's invariably custom to return to his sanctum when the household has retired for some hours of steady, hard work, writing reports for some of the numerous companies over which he presides, scrutinizing the statements of managers, or sketching the possibilities of some new enterprise. To a man of his calibre, who is the motive power in everything with which he is connected, such labour is enjoyment only to be eclipsed by his delight in exploring some unknown bay, or in speeding on his yacht through the blue waves of Lake

Magog. "Belmore," the country house used by the family during the hot summer months, is on the edge of this sheet of water—one of the prettiest on the continent—the mountains rising around it to the height of four thousand feet, its surface lively with miniature flotillas of steam and sailing yachts, canoes, and boats in constant demand for aquatic diversions. It was here that Sir Hugh received the Duke of Connaught when His Royal Highness was with his regiment in Canada. The lake, which is thirty miles in length, is neutral ground, lying partly in the Dominion and partly in the States, the boundary line running across its centre.

As a host Sir Hugh is cordial without elation. He has his peculiarities which, however, are not allowed to interfere with the comfort of his guests. He has never smoked, he has wisely eschewed spirits altogether until quite recently, when he has been obliged to take a little for his health's sake. Fond of cards, he has never risked more than a shilling on any game of chance in his life. Yet he spends his money with an open hand, and is generous and discreet in gifts. He possesses in a remarkable degree the faculty of throwing off all business cares when his work is done, and avows that even in the most harassing times he has never allowed mental worry to rob him of an hour's sleep. His conversation aims at being sensible rather than brilliant. One who has seen and done much cannot speak without speaking well. There is a charm, too, in his manly accents which only reach enthusiasm when, Colonel as to the backbone as he is, he talks of "the land of brown heath and shaggy wood."

When on the first of May, fifty-four years ago, the self-possessed Ayrshire lad stood on the deck of the vessel which was towed to the bank—in those days Montreal did not possess a wharf—by a small tug added by a team of oxen, he had no prevision that he was to be the chief agent in making the spot prosperous and busy. He had no thought of the great warehouses and steamships, the crowded wharves, all his own, which have grown up as if by enchantment. The lad's ambition rose no higher than to own a ship and command it, as his father had done before him. Yet his career was fixed. He was destined to create, and to maintain what he created. Difficulty could not deter him. He accepted what work he could get, and stayed in the new country until he was of age; then he came home and arranged with his brothers a plan of concerted operations. With this end in view he returned to his adopted home, became a clerk in a shipping-house, rose to be a partner, and then started for himself as a ship-owner and ship-builder. After several unsuccessful attempts to interest the Government on the project, Mr. Allan's firm at length obtained the contract for a line of steamers between Great Britain and Canada, and the "Allan Line" sprang into existence. At one time it appeared as though fate were against them. Ship after ship was wrecked. His brothers lost heart, but not so Sir Hugh himself. "Providence," he affirmed, "has not a special grudge against any honest enterprise, nor does it show it by bringing destruction upon innocent people. The fault is in ourselves in some disregard of nature's law. It is we who must find out what's amiss, and set it right." And he set to work. He traced the cause to the navigation at a high rate of speed of a dangerous gulf only partially surveyed and badly lighted. He induced the Government to grant an extension of the time for the performance of the voyage, and the danger disappeared, the "Allan Line" being to-day celebrated for its safety as for its regularity.

But Sir Hugh Allan has not been content with business in the home sphere of business. Enterprises of all kinds connected with the

colony receive his support, and are affected by his experience. Besides owning the principal share in his trans-Atlantic fleet, he is the President and chief shareholder of the Richelieu and Ontario Navigation Company, and practically the sole proprietor of the Halifax and Cape Breton Railway, constructed at a cost of nearly a million sterling, and of the greater part of the coal fields of Nova Scotia. He is founder and president of the Montreal Telegraph Co., and founder and a director of the Merchants' Bank of Canada; one of the largest shareholders in the Pullman Palace Car Company, and director of any number of other companies, including in uranium, cotton, woolen, and rolling mills, India rubber and tobacco manufacturers, and the owner of gold, silver, and copper mines.

But though he might rightly be called the greatest all-round merchant in the world, Sir Hugh's chief claim to public attention is his absolute identification of his own interest with those of the Dominion. The one passport necessary to obtain a hearing from him is the statement that the proposal intends to benefit his adopted country. He has provided Montreal with a theatre, a magnificent concert hall, and assembly rooms. He has done more for the material progress of Canada than any other ten men. There is not an industry in the country to which he has not at one time or another lent both brains and capital, often when the prospects of a return have been remote, and of all his immense fortune not a penny is invested outside the Dominion except in enterprises intimately connected with it. Throughout his long career, far from abusing the enormous trusts imposed upon him, he has rigidly set his face against wire-pulling or speculation on the part of his fellow-directors. He has never let any petty or personal desire interfere with what he considers his duty. He marks out his course and follows it with little, perhaps too little, regard for the opinion of the public—for an attitude of the kind is not conciliatory, and in putting down incipient commercial wrangling with a strong hand he has not failed to make enemies, ever afterwards anxious to spy a crevice in the proof armour of his honesty.

But it is not necessary, for the justice of his action is now universally recognized. His massive intellect, his massive business capacity, and his iron will have ever been at the service of his fellow-citizens, and they know it. In his success he invites comparison with the great millionaires of the neighbouring States, but with this difference, it has been gradual and steady, and independent of lucky hits or ingenious scheming. He is in this way an admirable representative British colonist of whom the Yankees themselves would say, "If any man living can beat his record send him along."

Snow Bound on the Plains.

TRAVELLERS CAUGHT IN THE FIERCEST OCTOBER STORM EVER KNOWN IN NEBRASKA.

(From the Worcester Spy.)

We pitched our tents carelessly, intending to take an early start the next morning. But, alas, for our expectations! During the night a strong wind set in from the northwest, and about 4 A.M. it began to snow. None of us could judge well of weather indications in Nebraska, and our guide did not suspect anything serious, for the oldest inhabitant could not expect a blizzard in October, and it was now only the 15th of the month. The guide thought, and the drivers believed, that the storm would cease at 12 M., and we, of course, trusted to their judgment. But, instead, the storm grew fiercer, the snow fell more rapidly, and the northwest gale increased in fury. Before night so much snow had fallen that it had lain as it fell it would have been at least one foot deep, but now it had been piled into drifts so that our mules stood with their feet nearly as high as the wagon tops, and the stove and furniture in our cook's tent were completely hidden from view.

The night shut in upon us gloomy and awful. We had two light canvas tents, in each of which slept four men, with just blankets enough to keep them comfortable in ordinary weather. But now we must provide for the guide, two drivers, and a porter, who had usually slept in the wagons, and, as they were slimly provided with clothing, we must share our stock with them. There was but little sleep in the tent that night, the cold was intense, and

the wind was so terrible in its effects that we feared every moment the larger tent would fall, though we had strengthened it by cords in every conceivable way. With the morning light it seemed as if all the spirits of the air were let loose, and all day long the storm roared with ever-increasing fury. The snow had so beaten in that when we awoke we found ourselves buried beneath it, and now we were obliged to gather all our bedding into the middle of the tent to keep it from being wet through. No man could long endure the storm outside, and we stood huddled together from morning till night, stamping our feet to keep from suffering. Even then we could not keep comfortable. For hours together we stood with our backs braced up against the tent to keep it from giving way under the great weight of the snow and the terrific force of the gale. I know of no language which can be used to convey to any person unexperienced in such a time any adequate conception of the fury of the storm. During the second day we succeeded in digging our little stove out of the snow-drift, and, setting it at the entrance of our tent, we managed to keep a little fire through the rest of the day and night. But our store of wood was very small, and there was no more to be had within we know not how many miles. The other tent's company had no stove and no fire. During the second night of the storm it was impossible that all should sleep at once, even if they could sleep despite the cold, for what with the stove on one side and all our provisions brought in from the wagons on the other, there was not room for all to lie down. Besides, it was necessary to keep the fire going lest we might all perish together. So we stood bonding over the stove all night, two at a time, while the others tried to sleep. It was an awful night. To add to our anxiety, the guide and drivers declared that the horses and mules were likely to perish. They were a pitiful sight, indeed. Two of them had no blankets, and the others were little better off. At times it was difficult to conceive that the creatures before us were horses, so literally covered were they with a coating of ice. After two days and two nights the storm ceased.

It was now Sunday morning. We knew not where we were, and we doubted if the guide had more definite knowledge than we. Every man was desperate. Some declared it dangerous to attempt to move through the snow, and that our only safe course was to remain, and in case of necessity, use the wagons for fuel and the horses for food. Others declared their purpose to move at all hazards, and without delay. Finally we determined to move. We threw away all luggage that could be dispensed with, and a grim silence started in the direction which we thought would bring us to the nearest hut. It was difficult travelling through the drifted snow, and it was bitterly cold. But all day long we pushed on, never stopping to feed a horse, breaking through the drifts with our ponies so that the teams could follow, till about 5 p. m., when we came in sight of haystacks, in the vicinity of which we knew there must be a ranchman's hut. I never saw a happier set of men than were these when it became certain that what they saw were haystacks, and not the terrible sand hills which had so often deceived us during the day. Grave men, merchants of Worcester, swung their hats aloft and shouted for joy. It had been a march for life.

The Utilizing of the Tides.

A Philadelphia engineer has invented, it is claimed, a machine by which the power of the tides can be utilized. Numerous plans have been proposed for the accomplishment of this most desirable end, but only under exceptional conditions have they been practical or economical. If the new device can harness the tide in an open channel, so as to convert any considerable portion of the vast power into working force, the inventor will rank among the great benefactors of humanity. Emerson says somewhere. Hitch your wagon to a star. A device for utilizing mechanically the free tides, as they sweep along our shores, would come next to that, since it would enable us, through converters and carriers of electricity, to hitch our wagons to the sun and moon.

An exchange says: "Streams all over the country are running dry." This is a canard. When a stream is dry it can't run."

A Hamilton man with an ingrowing nail, chopped his toe off. This remedy never fails. For sale at all hardware stores. Beware of imitations.

MICHIGAN SAW MILLS.

The following items will show what our neighbors in Michigan have been doing last season:—

William Buckley, Chase, has cut 1,000,000 feet.

C. R. Twichell, Maple Hill, made 17,822 shingles.

J. E. White, Pentwater, reports 3,000,000 shingles.

J. & J. Ratz, Reed City, report a cut of 800,000 feet.

Cloason & Gilbert, Manton, have cut 3,800,000 feet.

John Beardon, Midland, has made 6,000,000 shingles.

J. M. Weatherwax, Stanton, reports 4,750,000 feet.

Henry Stephens & Co., St. Helens, have cut 7,000,000 feet.

M. S. Lockerly, Sand Lake, has made 8,000,000 shingles.

J. R. Borat's mill, Cedar Springs, has cut 13,500,000 shingles.

E. A. Foster & Co., Ludington, turned out 20,864,000 shingles.

Norris & Richards, Breckenridge, have cut 800,000 shingles.

R. Peacock, Bay de Noquette, has cut 5,000,000 feet of lumber.

E. S. Briggs & Brother, Vicksburg, report 185,000 feet of hardwood.

E. Shay, Haring, reports 5,000,000 feet cut, and all of it on hand.

J. H. Nyman, Bangor, who does custom work, has cut 100,000 feet.

J. Miller Raub's mill, Chase, has turned out 2,000,000 feet of lumber.

Taber & Hopkins, Rockford, cut 1,700,000 feet of lumber, 300,000 pickets.

Ramsay & Jones' mill, Monominee, has cut 9,000,000 feet, 1,800,000 lath.

J. E. Nelson, Cedar Springs, has cut 1,000,000 feet, 14,500,000 shingles.

C. Pelton, Cedar Springs, cut 3,000,000 shingles, and has 300,000 on hand.

A. B. Wiser, Birch Run, has cut 840,000 shingles, and has 18,000 on hand.

J. & F. L. Post's mill, built the past fall at Clare, has cut 500,000 shingles.

F. W. Gilchrist, Alpena, has cut 15,000,000 feet of lumber, 3,594,000 lath.

Baker & Murray, Big Rapids, have cut 4,000,000 feet, and 3,000,000 shingles.

A. K. Moyer & Co., Cadillac, report 10,000,000 feet, with 7,000,000 on hand.

Dowy & Stewart, Owassa, cut 7,500 feet of pine and 31,000 feet of hardwood.

William Steinberg, Twin Lake, 1,400,000 feet of pine and 50,000 feet of hardwood.

Bond & Keyser, Bond's Mills, have cut 9,500,000 feet of lumber and 380,000 lath.

W. Young & Co., Choboygan, have cut 1,500,000 feet, and have 1,000,000 on hand.

F. & E. Haertel, Centralia, have cut 100,000 feet of hardwood and 3,000,000 shingles.

Cobbs & Mitchell, Cadillac, report 14,718,836 feet of lumber and 500,000 bed slats.

C. W. Dunning & Co., Twin Lake, have cut 700,000 feet of lumber and 80,000 shingles.

Oliver, Bolknap & Green, Greenville, report 3,000,000 feet of lumber and 200,000 lath.

William Broadwell, Bangor, has cut 1,200,000 feet of hardwood, and has 200,000 on hand.

J. W. Young, Farowell, has cut 7,000,000 feet of pine and has 2,000,000 feet on hand.

Morris & Stebbins, Mears, have cut 6,000,000 shingles and have 250,000 on hand.

C. H. Forman, Forman, has cut 3,000,000 feet of lumber, 500,000 feet on hand.

Gorriah & Diggins, Hershey, have made 21,350,000 shingles, 2,000,000 of which are on hand.

A Gilbert, Stanton, has cut 680,000 feet of lumber and has 250,000 feet of it on hand.

C. N. Storrs, Muskegon, has cut 9,000,000 feet of pine and 1,000,000 feet of hardwood.

F. S. Farr, Muskegon, cut 28,030,000 feet of lumber, 4,300,000 lath and 1,022,000 pickets.

D. W. Lewis & Co., Manister, have cut

100,000 feet, 20,000 on hand, and 35,000,000 shingles.

A. B. Long & Son, Grand Rapids, have cut 11,000,000 feet of lumber, 4,500,000 shingles.

C. H. Hackley & Co., Muskegon, report 30,173,962 feet cut, 8,000,000 lath, 35,000 pickets.

James Gibson, Fremont Center, has cut 125,000 sets of heading and 5,000,000 shingles.

L. H. Withey & Co., Grand Rapids, have cut 4,000,000 feet, and have 2,700,000 feet on hand.

Smith & Field, Spring Lake, have cut 3,000,000 feet of pine and 100,000 feet of hardwood.

F. N. Wright & Co., Greenville, have cut 3,000,000 feet of lumber, 3,000,000 shingles, 1,500,000.

George J. Qumby, Grand Rapids, has cut 1,500,000 feet of lumber, and has on hand 600,000 feet.

C. C. Comstock, Grand Rapids, has cut 7,500,000 feet of lumber, and has 3,000,000 feet on hand.

C. A. Hawley, Shelby, has cut 1,200,000 feet of hardwood, and has 100,000 feet of it on hand.

Geo N. Leo, Delta, manufacturer of handles and oars, has cut 600,000 feet of hardwood.

McCoy & Ayer, Cadillac, cut 10,000,000 feet, 4,500,000 on hand; 926,550 lath, 450,000 on hand.

Charles Beaudry & Co., Muskegon, cut 13,000,000 feet of lumber, 1,600,000 lath and 400,000 pickets.

W. H. Biglow & Co., Muskegon, have cut 14,702,000 feet of lumber, 15,000,000 lath, 160,000 pickets.

Swan, White & Smith, Muskegon, cut 21,000,000 feet of lumber, 3,250,000 lath and 116,000 pickets.

R. Whitman, James Redmond, agent, Stanton, has cut 3,000,000 feet of lumber, all of it on hand.

Herbert, Thomas & Co., Chase, have cut 2,500,000 feet of lumber, nearly all of which is on hand.

Freed Brothers, Stanton, report 100,000 feet cut, 20,000 on hand; 5,000,000 shingles 400,000 on hand.

W. Bishop, Shiloh, has cut 1,000,000 feet of pine, 300,000 feet of hardwood, and has 100,000 feet on hand.

G. A. Wagner, Mears, reports 2,500,000 feet of pine, 500,000 feet of hardwood and 4,000,000 shingles.

W. H. & E. K. Potter, Alpena, report 10,000,000 feet of lumber, 10,000,000 shingles, 2,000,000 lath.

D. D. Davis Trufant, has cut 300,000 feet of pine, 100,000 feet of hardwood and 3,500,000 shingles.

A. C. Fisher & Son, Coral, report 1,000,000 feet of pine, 50,000 feet of hardwood and 50,000 shingles.

N. A. Cobb, Ashton, has cut 600,000 feet of pine, 100,000 feet of hardwood, and has 150,000 feet on hand.

Higbee & Hugh, Morley, have cut 2,500,000 feet of pine, 200,000 feet of hardwood, and 150,000 shingles.

W. H. Thompson, Kalkaska, has cut 4,500,000 feet of lumber, 1,500,000 on hand, and 500,000 shingles.

F. J. Kadric, Birch Run, has cut 902,786 feet of pine, 104,742 feet of hardwood and 500,000 shingles.

The Pere Marquette Lumber Company, Ludington, report 9,056,664 feet cut, and 4,000,000 feet on hand.

Wilson Brothers & Miller, Ewart, report 200,000 feet of pine, 25,000 feet of hardwood and 200,000 shingles.

White Brothers & Co., Colby, report 1,200,000 feet of pine, 50,000 feet of hardwood and 1,400,000 shingles.

Sawyer, Goodman & Co., Menominee, report 4,200,000 feet of lumber, 4,800,000 shingles and 402,000 lath.

Bennett & Barnard, Colwell, have cut 8,000,000 feet of pine, 50,000 feet of hardwood and 3,000,000 lath.

A. V. Mann & Co., Muskegon, has cut 23,372,185 feet, 3,627,600 on hand; 6,221,000 pickets, 830,400 on hand.

Charles Mears, Whitehall, has cut 800,000 feet of pine, 500,000 feet of hardwood, and has 800,000 feet on hand.

J. S. Minor, Alpena, have cut 12,500,000 feet of lumber, 1,250,000 on hand; 2,200,000 lath, 350,000 on hand

H. D. Churchill, Alpena, has cut 12,755,675 feet of lumber, 3,550,000 on hand; 4,045,550 lath, 425,000 on hand.

E. P. Hayes, Woodville, has cut 5,000,000 feet, 2,000,000 on hand; 9,000,000 shingles, 250,000 on hand.

G. L. Doan, Shoridan, has cut 500,000 feet of pine, 100,000 feet of hardwood, and has 150,000 feet on hand.

Hannah, Lay & Co.'s mill, Traverse City, has made a cut of 18,183,400 feet, of which 7,000,000 are in the yard.

James Gowen, Gowen, has cut 3,000,000 feet of lumber, 3,500,000 on hand, 725,000 shingles, 250,000 on hand.

Smith Brothers, Choboygan, have cut 6,673,653 feet of lumber, 1,250,375 shingles, 2,070,950 lath, 940 pickets.

Henry Stephens' mills, at Stephens, have cut 25,000,000 feet of lumber, 5,000,000 shingles and 5,000,000 lath.

George T. Dwyer, Shelby, has cut 80,000 feet of pine, 338,000 feet of hardwood. He has 50,000 feet on hand.

The Stronach, Lumber Company have cut 11,300,000 feet of pine, 75,000 feet of hardwood and 263,000 shingles.

George W. Roby & Co., Ludington, have cut 17,586,832 feet of pine, 50,000 feet of hardwood and 2,693,050 lath.

W. Batchelor, Grand Haven, has cut at his mill, at Spring Lake, 7,000,000 feet, 5,000,000 of which is on hand.

Bellows Brothers' mill, Frankfort, closed down with a cut of 1,300,000 feet of pine and 200,000 feet of hardwood.

Sands & Maxwell, Pentwater, have cut 5,000,000 feet of pine, 2,000,000 feet of hardwood, and 15,000,000 shingles.

R. W. Bellamy & Co., Hershey, cut 1,000,000 feet of pine, 500,000 feet of hardwood, and have 100,000 feet on hand.

Raymond & Dunning's mill, Ewart, cut 500,000 shingles. The mill burned Sept. 7, and will not be rebuilt at that point.

George N. Stray, trustee, Ludington, informs us that his mill has cut 19,153,801 feet, and he has 500,000 feet on hand.

Covell, Ocobock & Co.'s shingle-mill, Whitehall, Mich., has cut 28,245,000 shingles, and there are 3,000,000 on hand.

Johnson & Link, Cedar Springs, have cut 3,000,000 feet of pine, 200,000 feet of hardwood, 1,000,000 lath and 5,000 pickets.

Hart, Ware & Horning, Woodville, have cut 8,000,000 feet, 3,500,000 on hand. They have also at their mill 1,000,000 lath.

James Campbell, Westwood, reports 1,200,000 feet of pine, 250,000 feet of hardwood, 300,000 shingles and 250,000 lath.

The Deer Lake Company, Ishpeming, have cut 2,780,976 feet of lumber, 524,000 shingles, 199,000 lath and 30,000 pickets.

Thomas R. Lyon, agent Ludington, has cut at one of his mills 2,000,000 feet of lumber, 6,850,000 shingles and 155,000 lath.

Ruddock, Palmeter & Co., Manistee, have cut 17,650,133 feet of lumber, 9,033,000 shingles, 4,590,650 lath and 44,519 pickets.

The Bessler Manufacturing Company, Muskegon, have a record of 22,800,000 feet of lumber, 7,164,000 lath, 35,000,000 pickets.

George Hannahs, South Haven, has cut 3,000,000 feet of pine, 245,000 feet of hardwood, 1,000,000 shingles and 300,000 pickets.

Henry Stowe, Orono, cut 500,000 feet of lumber and 5,000,000 shingles. On hand, 150,000 feet of lumber and 2,000,000 shingles.

William Bakker & Son, Grand Haven, report 6,000,000 feet cut, and 2,000,000 on hand. Also, 100,000 pickets, and 50,000 on hand.

The Chicago Lumbering Company, Manistique, have cut 17,000,000 feet of lumber, 1,500,000 shingles, 3,000,000 lath and 225,000 pickets.

Cartier & Filer, Ludington, have cut 14,000,000 feet of lumber and have 500,000 feet on hand. They have also cut 1,500,000 shingles.

Parmelec & Tremain, Lodi, report 400,000 feet, 60,000 on hand, and 50,000 shingles. The capacity of the mill will be increased.

The Wagar Lumber Company, Colby, have cut 2,000,000 feet of lumber and 6,000,000 lath. On hand, 500,000 feet of lumber and 1,000,000 lath.

Blodgett & Byrne, Holton, have cut 4,000,000 feet of pine, 300,000 feet of hardwood and 3,000,000 shingles. On hand, 2,500,000 feet.

Butterfield & Crable, Alpena, report 11,000,000 feet, 2,000,000 on hand; 4,500,000 lath, 700,000 on hand; 85,000 pickets, 60,000 on hand.

E. T. Merrill, Ashton, cut 200,000 feet of lumber, all on hand. One clapboard machine will be added to the machinery the coming season.

Judson D. Smith, Choboygan, has cut 11,000,000 feet of lumber, 500,000 lath. At Rogers City, Mr. Smith has cut 2,400,000 feet of lumber.

L. Van Winkle, Farwell, has cut 4,000,000 feet of lumber and 3,000,000 shingles. He has 1,500,000 feet of lumber and 400,000 shingles on hand.

Hileman, Hesser & Co., Trufant, have cut 7,500,000 feet, 4,000,000 on hand; 9,000,000 shingles, 2,500,000 on hand; 2,500,000 lath, 1,000,000 on hand.

S. H. Gray & Co., Big Rapids, have made 12,000,000 shingles and have 1,000,000 on hand. The capacity of the mill will be doubled this winter.

E. W. Bond & Son, Fife Lake, have cut 7,000,000 feet of lumber and 400,000 lath. They have 4,000,000 feet of lumber and 200,000 lath on hand.

A. J. Summerville & Co., Chase, have cut 3,000,000 feet of lumber, 200,000 shingles and 150,000 lath. They have on hand 1,500,000 feet of lumber.

Begole, Fox & Co., Flint, report 6,500,000 feet of lumber, 1,200,000 shingles and 900,000 lath. On hand, 6,000,000 feet of lumber and 500,000 lath.

The Stanton Lumber Company, Colby, have cut 10,000,000 feet of lumber and 7,000,000 lath. On hand, 7,000,000 feet of lumber and 1,000,000 lath.

James W. Willett, Stanton, reports 3,000,000 feet of pine and 30,000 feet of hardwood. He has on hand 5,000,000 feet of lumber and 10,000 pickets.

Nickerson & Colleser, Pentwater, have cut 800,000 feet of pine, 2,500,000 of hardwood and 2,500,000 shingles. They have 100,000 feet of lumber on hand.

William Rutherford & Co., Muskegon, report 20,287,122 feet of lumber, 900,000 feet on hand; 5,776,000 lath, 510,000 on hand; 208,250 pickets, 1,350 on hand.

A. G. Butler's mill, Frankfort, has cut 12,593,090 feet in a run of 152 days. He has another mill with a capacity of 6,000,000 feet, which has cut 4,760,480 feet.

The N. Ludington Company's mill at Escanaba, has cut 6,198,000 feet, and have 1,000,000 feet on hand. The mill has also cut 1,000,000 lath, and 125,000 pickets.

Charles L. Gray & Co., Ewart, have cut 2,000,000 feet of pine, 200,000 feet of hardwood and 8,000,000 shingles. On hand, 200,000 feet of lumber and 200,000 shingles.

Munroe, Boyce & Co., Grand Haven, have cut 7,000,000 feet of lumber, 4,500,000 on hand; 800,000 lath, one-half of them on hand; 320,000 pickets, all of them on hand.

G. F. Case's mill, Stanton, has cut 3,000,000 feet, 1,000,000 on hand; 13,000,000 shingles, 400,000 on hand; 500,000 lath, 100,000 on hand; 60,000 pickets, 10,000 on hand.

F. W. Read & Co., Eagle Mills, report 3,000,000 feet, 200,000 on hand; 945,000 shingles, 107,000 on hand; 559,000 lath, 37,000 on hand; 29,257 pickets, 63,000 on hand.

A. J. & C. E. Covell, Whitehall, have cut 10,900,000 feet of lumber, 2,200,000 lath and 100,000 pickets. On hand, 1,765,000 feet of lumber, 100,000 lath and 40,000 pickets.

W. C. Culbertson, Menominee, has cut 9,000,000 feet of lumber, 1,500,000 lath and 100,000 pickets. He has 5,000,000 feet of lumber on hand, 500,000 lath and 10,000 pickets.

Staples & Covell, Whitehall, have cut 11,800,000 feet of pine, 200,000 feet of hardwood and 2,500,000 lath. They have in their yard 1,000,000 feet of lumber and 200,000 lath.

The Kirby-Carpenter Company, Menominee, have sawed 50,570,169 feet of lumber, 5,049,000 lath, 377,997 pickets, and have now on hand 1,502,039 feet of lumber, 585,000 lath and 215,080 pickets.

The Sextus N. Wilcox company, White Cloud, have cut 18,000,000 feet of pine, 20,000 feet of hardwood, 2,400,000 lath and 68,000 pickets. On hand 9,700,000 feet of lumber, 600,000 lath and 68,000 pickets.

Walworth & Reed, Cedar Springs, have cut 9,000,000, 3,000,000 feet on hand; 5,000,000 shingles, 1,500,000 lath, 350,000 on hand; 150,000 pickets, 30,000 on hand. The Mill has been removed to Montague.

Rich Brothers, [Ontonagon, cut 4,000,000 feet of lumber, 1,500,000 feet on hand; 6,000,000 shingles, 250,000 on hand, and 10,000 pickets. The mill was burned October 4, and it now being replaced by one of double its capacity.

O. R. Johnson & Co., Douglass, have cut 1,200,000 feet of pine, 70,000 feet of hardwood and 881,000 shingles. The same firm's mill, at Saugatuck, has cut 4,850,000 feet of pine, 1,350,000 feet of hardwood, 2,500,000 shingles and 17,000 lath.

C. Meers & Co.'s Duck Lake, mill cut 320,700 feet of pine and 599,162 feet of hardwood. Their Silver Lake mill cut 1,905,951 feet of pine and 61,377 feet of hardwood, and their Lincoln mill, 1,046,871 feet of pine, 140,501 feet of hardwood, 268,000 shingles and 155,400 lath.

The Nipissing District.

Some time since we referred to the development of the Nipissing district by the building of a propeller by A. P. Cockburn, Esq., M. P., to run on Lake Nipissing next season. The proposed steamer, the "Inter-Ocean," is expected to be ready to make a trial trip by the end of June next. The workmen to be engaged in constructing the steamer left Muskoka, by way of Rossseau, about the middle of last December. A correspondent, recently writing, says:—"Owing to the difficulties of communication all the settlers in the Nipissing District so far have settled on the south side of the lake; and there is actually only one man, with his wife and child, living in all the vast expanse of territory north of its waters. The establishment of short colonization roads running north and south from the lake; the navigation of the Sturgeon river and other tributaries of the Nipissing by the 'Inter-Ocean'; the daily arrival of trains at Calder, and the construction of the Sault Branch Railroad, will give a wonderful impetus to the settlement of the country. As demonstrating that the winters in the Nipissing District are not of necessity more severe than those in Muskoka, the fact is communicated that although last week there were about two feet of snow at Bracebridge, there were only three inches at Lake Nipissing. The most recent surveys confirm every statement as to the fertility and suitability of a large proportion of that country for settlement by agriculturists. A map carefully corrected by field notes, and issued within the past few weeks by the Crown Lands Department at Toronto, shows that in the townships south of the lake and French River 95 per cent of the land is arable, and well wooded with birch, white oak, hemlock and balsam. It may be mentioned that the want of a steamer has been much felt by lumbermen in this district during the past year. It is not expected that the enterprise will be immediately successful from a pecuniary point of view, but there is such confidence in the future of that District that a Lake Nipissing Navigation Company will before long be formed."

Kinmount News.

Mr. Jabez Thurston, of Lindsay, had a practical engineer here a few days ago trying to purchase three acres of land of Mr. J. W. Gilmour, for a large steam mill here.

Several American gentlemen are now negotiating with Mr. J. Crego, to purchase sites here for steam mills. We expect to have over eight or nine steam mills here soon.

Mr. M. Chase, who is a partner with John Dovy here at our new mill, is engaged in moving a 75 horse-power boiler to the mill. The boiler contains 179 flues. It is the largest boiler which ever came to this locality. The mill is now enclosed and there are over 20 men to work at it daily. The mill is expected to start work in 14 days, cutting boards and shingles for the American market.

Messrs. Paxton and Jones are now getting out square timber and saw logs to build a large frame boarding house, 40 by 80. This house will be under the care of Thos. Baker, who keeps the other boarding house at the iron mines.

New Processes in Milling.

All the Minnesota millers are now fighting the old-fashioned flour barrels. They say it is a relic of barbarism. They desire to substitute the cotton sack in its place. Cotton sacks holding a half-barrel of flour are worth ten cents apiece. Flour barrels are worth forty-five cents each. All the flour shipped to Glasgow and Rotterdam goes in cotton sacks. These sacks are worth as much there as here. The millers maintain that flour does not sift through a good cotton bag as much as it sifts through a barrel. Ten bags of flour were shipped to Glasgow, returned to Minneapolis, and sent again to Glasgow. When weighed they had actually gained in weight. Six hundred barrels of flour put up in bags and shipped to Glasgow will gain in weight one thousand eight hundred pounds. When New York flour dealers begin to handle flour in half barrel sacks, the people will save twenty-five cents on a barrel and have their good sacks left.

The old millstones are all being taken out and new steel rollers are substituted in their places. The wheat passes through five sets of rollers, each set closer than the former. These rollers are thirty inches long and ten inches in diameter. After passing between each set of rollers it is "bolted" or sifted through the cloth. The last rollers are hardly anything but wheat hulls and the waxy germs which do not crack up, but smash together. So flour is now cracked and disintegrated without grinding. The first rollers crack the kernels of wheat into six pieces. The starchy substance which rattles out drops through the cloth sieves or bolting cloth. These six pieces are broken between the next rollers in thirty-six pieces. Then the white starch crumbs are sifted out again, and the thirty-six pieces are passed between still tighter rollers, which crack them into 216 pieces; another set of rollers multiply each of these particles into six more, making them aggregate 1296. Another set of rollers screwed together with tremendous pressure makes 7776 pieces. The scientific miller says a gram of wheat is finally cracked into 7776 pieces without being ground at all. This is the Hungarian process. The germ of a kernel of wheat is a waxy substance not fit to eat. Between stones this germ grinds into the flour and damages it. By this new process of the Hungarian rollers this germ is flattened out, and it is bolted out. However, it is finally ground up with the debris on stones to make the low grade flour, which we sell in Rotterdam for \$2.50 per barrel.

ST. LAWRENCE LUMBER TRADE.—The figures relating to the lumber trade of the St. Lawrence with South American ports, for the season just closed, have been published. They show that the total shipments of sawn lumber were 10,286,184 feet, four-fifths of which quantity was sent from Montreal. It was expected that a heavier business would have been done during the season, but the trouble between Chili and Peru has had a depressing effect upon trade; and though the above figures are on a par with those of recent years, they do not compare in amount with the operations of the earlier years of the decade just closing. In 1872 and 1873 the shipments were twenty-eight million, and thirty-six million respectively.

ARNPRIOR LUMBER TRADE.—The *Arnprior Chronicle* says that Messrs. McLachlin Bros., of Arnprior, are making extensive arrangements to meet the wants of the lumber trade next season. They are rebuilding the water ways leading to their mills, and putting everything in order to insure an early start in the Spring. They contemplate the erection of a large steam mill here next summer, which they expect to have in running order early in the Fall. About 700 men are employed by this firm in getting out logs and square timber on the Madawaska and Conlongo this Winter. The firm recently purchased a new limit of 100 miles on Opougo Lake. They have now four large limits, situated on the Madawaska, Bonnechere, Coulorge and Petawawa streams, and we learn that it is their intention to carry on lumbering operations on a most extensive scale.

MINING NOTES.

WHEELING, W. V., Jan. 5.—The strike of coal miners in this vicinity has caused iron mills and glass factories to suspend, throwing 5,000 men out of employment.

WHEELING, West Va., Jan 5.—A strike of coal miners in this vicinity has caused the iron mills and glass factories to suspend, throwing 3,000 workmen out of employment.

TAKON RIVER.—Marvellous stories of the richness of quartz from the Takon River diggings are told. The specimens are very rich. The mines are believed to be in Canadian territory.

THE BROCKVILLE RECORDER says, Mr. Caldwell, of the firm of Byrd & Caldwell, opened a new mine on the 1st inst. in the township of Lavant. The ore taken from it is of the very best quality.

There is good authority for stating that such is the rush to secure and develop mining properties of one description or another in Nova Scotia, the Provincial Government will realize about \$100,000 a year from mining licenses, royalties, &c.

THE BRAVER MINES.—The Canada Gold Mining Company of the Gilbert River, Bruce County, are employing fifty men. The operations of this Company are conducted, it is said, in keeping with their pretensions, which are solid and substantial.

A SENSITIVE MULE.—Employees of the Streater Coal Company attempted to lower a fresh mule into the mines. When the cage started down the animal was overcome with terror, and when they went to take him from the cage they found he had died of fright while descending.

OTTAWA MINING.—The phosphate interest is looking up. Some fifty men are constantly employed in mining operations in the Du Lievre district. There are 3,000 tons ready to bank on the river, and hauling to Buckingham station has begun. It is estimated that some \$75,000 will be paid for teaming alone this winter.

SILVER ISLET.—A gentleman well acquainted with Silver Islet, states that, from the silver ore now within view, and from the general results of drilling operations, he is of opinion that there is still between \$50,000,000 and \$60,000,000 worth of silver in the mine. He thinks that there is little doubt but the Pe, Victoria and Duncan mines are almost equally rich. A very valuable gold mine has recently been discovered some distance from Prince Arthur, and the vein traced a distance of six miles. The mining interests of the Thunder Bay region certainly never appeared more promising than they do now.

THUNDER BAY.—The North Shore Miner says Mr. Amos Bowerman came up from the Thunder Bay Iron Mine last evening, accompanied by one of the miners. He brings with him several specimens of the ore taken from the vein. He informs us that the prospects are looking brighter and brighter every day, as the work advances. The men are still at work uncovering the vein, no ore of any amount being taken out. Everything is being got in readiness for the extensive development to be carried on next season. Mr. B. returns again in a day or two.

The St. Ouge Company have sold out to a Mr. McArthur, of Toronto, who is working his mine with quite a force of men. Lot 13, owned by Messrs. J. Ainsworth & Co., of New York, employs a few men, and the results have not been very favorable. Under a sworn statement before the Mining Inspector, of this District, ending 31st October, the yield was but ninety-one ounces. At \$17.50 per oz. this would be in round numbers \$1,592.50. The time taken to get this amount of gold will date from the month of August until 31st October, about two and one-half months. This last named Company's pay rolls amounted to \$2,000 and upward per month, showing a serious loss to the Company. The property of this Company is now under seizure for debt due labor and goods furnished. This is the second New York Company which beginning under fair auspices have fallen short.

EAGLE HEAD MINE, C. B.—A correspondent describing the mine says:—The property consists of one square mile—is situated on the North Shore of Gabarus Bay;—contains three lodes of ore, measuring, respectively, 90, 45, and 36 feet. Other lodes are known to exist on the property, but have not yet been prospected. The analysis show a good per centage of Copper and Bismuth, and a small percentage of Silver and Lead, with a trace of Gold, and some other minerals in small quantities. Ore can be

taken out nearly as fast as it can be shipped. The facilities for shipping are excellent, as vessels can load within 100 yards of the mine. Should the ore give satisfactory returns, the prospect of a great mining establishment at Eagle Head is very certain. The property has just changed hands—Messrs. McKinnon and McKenzie were the former owners, and McLellan and Fearn, of Halifax have recently bought the property, and are now operating it with good prospects of success. Mr. McLellan is Manager.

A TOUCHING STORY.—One rarely meets a bit of more touching romance than is found in the following story that comes from Wales:—"Years ago some Welsh miners, in exploring an old pit that had long been closed, found the body of a young man dressed in a fashion long out of date. The peculiar action of the air of the mine had been such as to preserve the body so perfectly that it appeared asleep rather than dead. The miners were puzzled at this circumstance; no one in the district had been missed within their remembrance, and at last it was resolved to bring the oldest inhabitant—an old lady long past her eightieth year, who lived single in the village the whole of her life. On being brought into the presence of the body a strange scene occurred; the old lady fell on the corpse, kissed and addressed it by every term of endearment, couched in the language of a by-gone generation. He was her only love; she had waited for him during her long life; she knew that he had not forsaken her. The old woman and the young man had been betrothed sixty years before. The lover had disappeared mysteriously, and she had kept faithful during that long interval. Time had stood still with the dead man, but had left its mark on the living woman. The miners who were present wore a rough set, but very gently and with tearful eyes removed the old lady to her house, and the same night her faithful spirit rejoined that of her long-lost lover."

A MOUNTAIN OF SILVER.—The captain of a whaling vessel just returned from the Arctic Ocean says that, while the vessel was lying in a small bay at the mouth of one of the rivers which empty into the ocean on the coast of Alaska, he, one of the mates and four men, went up the river to catch salmon. At the foot of a hill, bordering the river, they commenced fishing. While the sailors were engaged in this work, the captain and mate ascended the mountain, which appeared to be about 400 or 500 feet high. Arriving at the top, they found what seemed to be the crater of an extinct volcano, and around were evidences that at one time there had been a terrible eruption. In the crater itself the captain noticed that the rocks resembled congealed iron after it had been melted, and undertook to knock off a piece, but could not do it, as it bent and did not break with his repeated blows with the head of a hoe-axe. He then struck it with the blade of an axe, and actually chopped it off. He saw that the substance was as soft as lead, but it did not burn. He determined to bring it to San Francisco and have it assayed. One of the natives also brought a piece of rock about 12 inches long by 6 inches thick, which weighed 48 pounds and sparkled with gold, stating that he had found it near another hill further up the river and that such rock was plenty there. When the vessel arrived at this port, the captain told his story to a gentleman living in Oakland, and the specimens were handed over to him for the purpose of having proper assays made. This was done, and the piece which the captain chopped off the top of the hill with the axe went \$6,000 per ton in silver, and the loose rocks picked up on the side of the hill went as high as \$275 of silver per ton. It seems, then, that this hill is a mountain of silver, and that it is only the beginning of vast discoveries which will soon be made in Alaska, which may yet become the El Dorado to which thousands will rush. The Oakland gentleman spoken of immediately formed a party or Company, which has chartered the whaler to take a trip to the scene of the remarkable find as soon as the season opens.—*San Francisco Chronicle*.

NEW BRIDGE.—The new iron railway bridge across the Ottawa above the Chaudiere Falls, just completed, is a fine structure, 2,160 feet in length. The first passenger train ran over it on Thursday last. It has been severely tested and the greatest deflection of any of the spans was but half an inch. The bridge is calculated to bear six times the pressure ordinarily to be put upon it. It will be used by the Q. M. P. & C. Railway, which will have a union station on the Ottawa side of the river with the Canada Central.

Schliemann.

A GLANCE AT THE EARLY DAYS OF THE GREAT
DIGGER GIVEN IN HIS NEW BOOK.

Before plunging into the record of his discoveries Dr. Schliemann stops to tell the story of his life. It is such a one as we might expect from such a man, and shows how the work of his later life has been the natural consequence of the impressions he received in his earliest years. "The pickaxe and spade for the excavation of Troy and the royal tomb of Mycenæ," he writes, "were both forged and sharpened in the little German village in which I passed the first eight years of my childhood." Dr. Schliemann also thinks it necessary to relate how he obtained the means which enabled him in the autumn of his life to realize the great projects formed when he was a little boy. With a scholar's simple-mindedness he flatters himself "that the manner in which I have employed my time as well as the use I have made of my wealth will meet with general approbation." Dr. Schliemann need feel no doubts on that point. There may be a few to cavil, but their idle tongues are drowned in the applause of the multitude. This distinguished explorer was born on the 6th of January, 1822, in the little town of Neu Buckow, in Mecklenburg-Schwerin, where his father was Protestant clergyman, and from whence he moved in 1823 to the village of Ankershagen, in the same duchy. In Ankershagen the young Schliemann spent the first eight years of his life. The neighbourhood was as full of tradition as it was of ruined castles, and the imagination of the boy had full sway. Near the Schliemann cottage was a tomb in which the body of an infant and countless treasures were said by the village gossips to be buried. Nothing but the stern command of his father prevented the child from beginning his excavations then and there and proving the truth or falsity of the village tongues. Though the elder Schliemann was neither a scholar nor an archaeologist, he had a passion for ancient history, and the first stories he told to the child at his knees were of the Homeric heroes. When nearly eight years old the reverend Schliemann presented his son with a volume of Dr. Jerro's "Universal History," containing an engraving representing Troy in flames, with its huge walls and Scævan gate, from which the good Æneas was escaping with his father on his back. This picture convinced the boy that Troy could not be utterly destroyed. "Father," he cried, with a precocity that must have carried conviction "if such walls once existed they can not possibly have been completely destroyed; vast ruins of them must still remain, but they are hidden away beneath the dust of ages." They argued the question awhile, and the son climbed down from his father's knee, vowing that he should one day excavate Troy. This idea so filled his mind that he could not enter with spirit upon his dancing lessons, and his teacher complained that his heels were as heavy as his head. At the age of 14, the affairs of the family made it necessary for him to leave his studies and go to work. He became a grocer's clerk, but his heart lay buried in Troy. With the coffee bags on his back he was Æneas recuing his old father from the flames; dealing out molasses to petty-maids, he was Paris offering bumpers of wine to Helen. Five years of this drudgery did not change his determination. After various mishaps he got a situation in the country house of an indigo merchant in Amsterdam. Here he saw an opportunity to rise. The lover he used was hard work. At first he took writing lessons to improve his unclerical penmanship. Afterward he began the study of languages. His salary at this time was \$160 per annum, half of which was spent on his studies. On the other half he lived "miserably enough." His lodging, which cost eight francs a month, was a wretched garret without a fire, where he "shivered with cold in winter and was scorched with heat in summer." His breakfast consisted of "rye-meal porridge," and his dinner never cost him "more than two pence." But nothing, he exclaims, "spurs one on to study more than misery and the certain prospects of being able to release one's self from it by unremitting work." He studied English and French, and mastered both in a year's time. Dutch, Spanish, Portuguese, Italian, and Russian followed, and later Latin and Greek. Such a man could not fail to attract the attention of his employers, for he delved as hard at learning the indigo business as at Greek roots. He rose step by step. He was sent to St.

Petersburg in 1846 as agent for his Amsterdam employers, but gradually becoming richer he set up for himself. In 1850 he went to California to look for a brother, whom he found dead; but the newly annexed country was made a state on July 4 of that year, and as, says Dr. Schliemann, "all those then resident in the country became by that fact naturalized Americans, I joyfully embraced the opportunity of becoming a citizen of the United States." In 1853 he thought he had money enough to retire, and traveled over northern Europe, Italy, Egypt and Palestine. A lawsuit brought him back to business to St. Petersburg, where he made more money. In 1863 he again found himself rich enough to retire, so he gradually liquidated his business, and as a preliminary holiday to his life work began in 1864 a tour of the eastern world, crossing back by way of San Francisco, and writing his first book, "China and Japan," on the voyage. He came by way of Nicaragua to the eastern States, visited Havana and Mexico, "and in the spring of 1866, settled down to the study of archaeology henceforth, with no other interruption than short trips to America."

Another Cliff Town Discovered.

The occurrence of ancient cliff towns, built upon or rather in almost inaccessible places along the precipitous sides of river canons in Colorado and New Mexico, was made known several years ago. Another very important discovery of this nature was made a short time since by Mr. James Stephenson, of the U. S. Geological Survey, in New Mexico. The city lies in a canon thirty miles long, never before visited by white men, and is about forty miles from Santa Fe and ten miles from the Rio Grande. It consists of a succession of excavations in the solid rock throughout the length of the canon, making, perhaps, the largest cliff town yet discovered.

The houses are dug out of the rock side to a depth of from fifteen to twenty feet. Apparently they were excavated with stone implements. They are almost inaccessible from the plains. Mr. Stephenson, however, managed to clamber up the rocky precipice, and entered and examined a number of articles that he thought remained of their first possessors. A scientist who had traveled in that region and visited other caves and excavations of a similar kind says he is disposed to believe that they have been tenanted within modern times by Indians at war with other tribes, seeking safety and advantage over their enemies. He thinks the remains found there are the remains of the things these belligerents have used, eaten, or worn, and not the relics of the first owners of the rock houses.

Exhausting the Wheat Lands.

(From the Fall Mall Gazette.)

There is one point in American competition with England which, though it has now and then been touched upon, has never been thoroughly worked out. America is undoubtedly reducing the rent of land in England by the amount of food which she is enabled to send over here at a cheap rate. In this way, too, land of inferior quality in England is going out of cultivation. But all this grain which is sent represents really so much valuable manure. Instead of using it we sit up our rivers with the sewage of our large towns, and millions' worth of fertilizing agents are year after year swept into the sea. This is bad enough by itself. What is worse, however, is that each successive wheat centre in the United States is more rapidly exhausted than the one before, owing to the excessive over-cropping and the want of manure. Thus, the soil in the United States is undergoing deterioration to supply us with the necessaries of life, while we who receive the food allow our soil to go out of cultivation when the very substances we receive would if properly used enrich and fertilize it. Posterity, perhaps will think we had very curious ways of dealing with their planet.

A FAMILY never becomes extinct in Japan. If there are no male descendants, a young son of another family is adopted, and takes the family name.

A lecturer once prefaced his discourse upon the rhinoceros with, "I must beg you to give me your undivided attention. Indeed, it is absolutely impossible that you can form a true idea of the hideous animal of which we are about to speak unless you keep your eyes fixed on me!"

How they get India Rubber in Africa.

(From the Rubber Era.)

Having passed fully three years on the southwest coast of Africa, as trader for an English firm, I will endeavor to describe the manner in which India rubber is procured in that country, as India rubber formed the staple produce of the district where I was located.

The natives are in a very rude, uncivilized condition. They have no currency, and do all business by bartering the native products for manufactured stuffs. Their wealth consists chiefly in the number of slaves they possess, who fish, hunt, and keep their plantations in good order.

When rubber has been collected, from four to ten slaves get their flint muskets in order, each carrying, in addition, a long sword-shaped knife called a machete, a number of calabashes or jars to collect the juice of the rubber vine, and a little food that has been cured in smoke, as they can find plenty of sustenance in the bush without carrying it about with them from place to place.

The vine are in some cases near to the towns, but generally the natives have to go several days' journey into the bush before they can sit down and commence business. The vine itself is of rough, knotty nature, about as thick as a man's arm, and grows to a length of fully two hundred feet. Its leaves are are glossy, like those of the South American rubber tree, and a large fruit much liked by the natives, is gathered from it. I have tasted it, and found it very palatable, being slightly acid. This vine (what its scientific name is I don't pretend to know) yields several grades of rubber, each of different commercial value, the best quality being taken from the highest part, and the poorest from the bottom.

With their knives, or machetes, the natives slash the vine in several places, and put broad leaves directly underneath the wounds for the juice to drop on, and which, being of a strong, adhesive nature, none of it may drop on the branches of the tree, and so get lost; but it is not often they trouble themselves climbing, unless the vines happen to be scarce in the vicinity. The entire day they devote to cutting; next day they gather what was cut the day previous, and so on. Each evening, after collecting, they put all the juice they have into several iron pots, or earthen vessels of native manufacture, and boil it; at the same time they can greatly improve the lowest quality by adding a little salt, and the more they boil the juice the better it becomes. When sufficiently boiled the water is poured off and the juice is allowed to cool, when it is fashioned according to the grade—ball, flake, mixed, or tongue—and is ready for the market. In this way about twenty or thirty pounds a day is generally collected. It is then taken to the factory, and there exchanged for guns, cloth, rum, &c. When it is received at the factory it is carefully marked, cased, weighed, and put into casks for shipment. It contains so much water that twenty per cent. is deducted from the weight of each cask, as that is about the amount of shrinkage on the voyage. This is, however, a loss to the native, as it is deducted from him when selling.

This vine, from my personal observation, is to be found from Sierra Leone in the north to Vunsembo in the south, but along the coast line it is rapidly becoming extinct, as the natives are so careless or rapacious that in many cases they completely sever the vine, thus killing it, instead of simply bleeding it.

An Ice Cave in Montana.

Two explorers named Lambert and Caruthers discovered, last summer, a large cave on the Dry Fork or Arrow Creek, in the Bell Mountains, in which was half an acre of solid ice of unknown depth. At the time of the discovery, about August 1, the ice was covered with ten inches of water, which prevented a thorough exploration of the Cave. The Fort Benton Press says that the ice gives every indication of being in a great body, and it is believed, from its appearance, and the fact that in the hottest season only a few inches of it was melted, that it is perpetual. The cave is described as being a great resort for game, as all kinds were killed close to its entrance.

UNCOMPROMISING.—The doctor's daughter—"I declare you're a dreadful fanatic, Mrs. McCizzom. I do believe you think nobody will be saved but you and your minister!" Old lady—"Aweel, my dear, ah whiles I hae my doobts about the meemister!"

SCIENTIFIC GOSSIP.

Dr. Maclaren, of Edinburgh, Scotland, states that the types of insanity have changed within modern times. For instance, acute delirious mania is now comparatively rare, but mental enfeeblement attended with paralysis is becoming more and more common, and is the result of the overwork and worry of the struggle for existence at the present day.

The Russian Government is well pleased with the new torpedo-boat called the Batoum, which has been thoroughly tested in the Black Sea. This vessel is 100 feet long, and carries two torpedo guns, built into her hull forward, for discharging Whitehead torpedoes. In the boats of the same class now building there will be three torpedo guns forward instead of two. The Batoum behaves excellently at sea, and makes 22 knots an hour.

A very powerful electric light of the Brush system was exhibited on Nov. 29 at the London works of the Anglo-American Electric Light Company. The lamp, of the ordinary Brush type, carried carbons 1.25 inches in diameter, and the energy of the current was so strong that the carbons were raised to a white heat two inches from the arc. The photometric power of the light is said to be 47,000 standard candles.

Neither the cool walks of science nor the deep shades of the descent of the hill of life seem capable of subduing the hot blood or tempering the fiery language of some men. The *Medical Press and Circular* says: "A most painful scene has occurred at a session of the Paris Academy of Medicine. During a warm discussion on the cholera of fowls, M. Guerin addressed M. Pasteur in the following words: "You are a liar, Sir; I will send you my seconds." Yet M. Guerin is an octogenarian and M. Pasteur hopelessly paralyzed on the left side.

M. A. Colson thus describes the manufacture of phosphoric acid in the *Bulletin* of the Chemical Society of Paris: "Natural phosphates, underground, are dissolved in dilute hydrochloric acid. When the acid has ceased to act the clear solution is run off from the insoluble matter and mixed with sulphuric acid enough to saturate all the dissolved lime, leaving a mixture of hydrochloric acid, diluted phosphoric acid, and calcium sulphate. This mixture is submitted to pressure to separate the sulphate from the free acids, which are then concentrated, and the hydrochloric acid is condensed and collected for use by means of ordinary columns.

From a comparison of the result of recent deep-sea soundings, it appears that the following are just generalizations: 1. The water of the North Pacific is in its whole mass cooler than that of the Atlantic. 2. The water of the South Pacific is, down to 4,225 feet, somewhat warmer than that of the Atlantic, but below that depth colder. 3. The bottom temperatures are generally lower in the Pacific than in the Atlantic at the same depths and in the same degree of latitude; but nowhere in the Pacific are found such low bottom temperatures as in the Antarctic portion of the South Atlantic, where temperatures of -0.3° Centigrade to -0.6° have been measured. 4. In the western parts of the Pacific and the adjoining parts of the East Indian Archipelago the temperature of the water reaches its minimum at depths between 1,787 and 8,937 feet, remaining the same from this depth to the bottom. In the whole of the Atlantic the temperature from 8,937 feet to the bottom gradually, though slowly, increases.

A very interesting lecture was recently delivered before the Anthropological Institute, London, by Mr. J. F. Rowboham, on the different stages in the development of the art of music in prehistoric times. Although, he said, the varieties of musical instruments may be counted by hundreds, yet they are all reducible under three distinct types: 1. The drum type. 2. The pipe type. 3. The lyre type. These three types are representative of three distinct stages of development through which prehistoric music had passed, and in the order just stated. The first period in the development of music was the drum stage, in which drums and drums alone were used by man. The second was the pipe stage, in which pipes as well as drums were used. The third was the lyre stage, in which stringed instruments were added to the stock. There three stages answer respectively to rhythm, melody, and harmony. In the musical history of mankind the lyre stage is never found to precede the pipe stage, nor the pipe stage to precede the drum stage.

The Sultan's Levee.

POMP AND CEREMONY AROUND THE REPRESENTATIVE OF THE BANKRUPT OTTOMAN EMPIRE.

We assisted at the grand Bairam ceremonies at Dolma Baghiche palace yesterday. The Sultan holds a levee, and receives all the ministers, officials, and officers, who congratulate his majesty and wish him a prosperous Bairam or festival. The diplomatic body was ushered through a number of lofty passages, through countless salons blazing with gilt, Damascus silks and marqueterie, into what is considered the most magnificent throne-room in the world. It is a gigantic oval, with glittering wood floor and whose roof is upheld at an immense height by splendid Corinthian columns of fluted marble, of that fine pink-veined quality only quarried at Lesbos. Every inch of the roof is covered with a fresco painting of such artistic style that it can hardly be distinguished from groups of flowers, arabesques, etc., in bold relief. Great windows let in the glorious light of day at either end, and near one of those windows was the throne, at that moment unoccupied. It is a low, wide sofa, about five feet long, whose back, legs, and sides, are covered with plates of gold, and covered with a red silk cushion studded with stars.

When we entered the Salle du Trone it was filling with the throng of government officials, some of whom had come from long distances to pay their court to their sovereign. One venerable snowy-boarded pasha was pointed out to me as the governor of Hedjaz, the most distant Turkish vilayet, and who had spent nearly three months en route. This glittering array of uniforms was slowly placing itself in a double line all around the hall, and more were pouring in constantly and taking their places. The cabinet ministers, prominent among whom was Behram Agha, the chief eunuch, an attenuated old "darkey" in a gold-embroidered dress coat, placed themselves in a line standing behind the gold divan. Without an exception, they all wore the grand cordon of the Osmanic with the "Cricket" in brilliant. Pretty soon about 2,000 persons were in, all in full uniform, officers in epaulettes and swords, muftis in flowing robes of green, purple, cream-white, and blue tondre with tight, black coats showing off well with their splendid figures, with the double range of silver cartridges on each breast, and their Astrachan caps half concealing the classic features of descendants of the oldest race in Asia.

Presently a sort of thrill runs through the line of patient officials, each man steps well into line, adjusts his gold collar, tilts the fez a fraction of an inch further back, gives a last tug at his new gloves, the folding doors at one side near the throne are flung open; and welcomed by a pealing crash from the Imperial Band in the gallery, the autocrat of Turkey slowly steps into view and takes his place on the throne. A concealed chorus then sang, or rather shouted, a species of short song of praise, and every Turk present bowed in an humble salaam. This is done, I may explain, by scooping up an imaginary handful of dust, and rapidly placing it on the lips and forehead, the depth of the "scoop" being in direct proportion to the rank of the salute.

The ceremony of the Rikiab, or "submission," which consists of kissing an embroidered scarf held by the grand master of ceremonies, in lieu of the Sultan's hand, then began. The cabinet ministers fell in line, followed by ex-grand viziers, generals, admirals, muftis, and so on down to the small fry. Each one salaamed when within three yards of the Sultan, did so again just before kissing the scarf, did so immediately after, then backed off a few paces and made another salaam. This being done very solemnly and very methodically, two or three hours elapsed ere the last fez had bowed before the sovereign. The band had at intervals played in excellent style several pieces among which the Turkish national air, "The Hamidie," a spirited march was prominent.

The sultan then rose, made a slight but comprehensive bow, returned by a low salaam from the two thousand courtiers, and disappeared from behind the folding doors, at each side of which a splendid Circassian then placed himself, in a martial attitude.

We were about to wrap up and leave, when a stout aide-de-camp appeared among the little knot of visitors, and informed us that, as a great exception, the sultan would be graciously pleased to receive us all per-

sonally. We numbered about fifteen. There were Count Hatzfeldt, the German ambassador; Mrs. Tyrell his sister; Mrs. Goschen, Mme. de Novikoff, wife of the Russian ambassador; the Spanish minister's wife in a gorgeous dinner dress (1), a small party of Englishmen from the Pandora, Hon. W. H. Smith's yacht, and the American party consisting of Gen. Longstreet, our minister, who arrived the day before, Mr. Robert Hooper, jr., and your correspondent. We passed into a small blue-satin room, and found the sultan standing near the threshold, with two officers behind him and Munir Bey, his interpreter, at his side. We were all presented, and bowed and shook hands silently with his majesty. Abdul Hamid wore a long blue coat of very antiquated cut, black trousers with a broad red stripe, the single star of the Osmanic, and a broad green-and-red ribbon crosswise on his chest. He is a little under the average height, with a sallow, anxious face and a thin black beard, and with deep crowfeet and forehead wrinkles. His smile, however, was remarkably pleasant, and his voice low and musical.

As we left the presence, he invited us to come another day and visit the palace—a rather unusual piece of courtesy.

The Stormy Petrel.

The stormy petrel, known to sailors as the Mother Carey's children, is hated by them after a most illogical manner because it foretells an approaching storm, and therefore by a curious process of reasoning is taken for its cause.

This bird has long been celebrated for the manner in which it passes over the waves, pattering with its webbed feet and flapping its wings as to keep itself just above the surface. It thus traverses the ocean with wonderful ease, the billows rolling beneath its feet and passing away under the bird without in the least disturbing it. It is mostly on the move in windy weather, because the marine creatures are slung to the surface by the chopping waves and can easily be picked up as the bird pursues its course. It feeds on the little fish, crustaceans, and mollusks which are found in abundance on the surface of the sea, especially on the floating masses of algae, and will for days keep pace with a ship for the purpose of picking up the refuse food thrown overboard. Indeed, to throw the garbage into the sea is a tolerably certain method of attracting these birds, who are sharp-sighted and seldom fail to perceive anything eatable. It is believed that the petrel does not dive. The word petrel is given to the bird on account of its powers of walking on the water, as is related of St. Peter.

It does not frequent land except during the breeding season, and can repose on the surface of the ocean, settling itself just at the mean level of the waves, and rising and falling quietly with the swell. The petrel breeds on the northern coasts of England, laying a white egg in some convenient recess, a rabbit burrow being often employed for the purpose.

This bird possesses a singular amount of oil, and has the power of throwing it from the mouth when terrified. It is said that this oil which is very pure, is collected largely in St. Kilda by catching the bird on its egg, where it sits very closely, and making it discharge the oil into a vessel. The bird is then released and another taken. The inhabitants of the Faroe islands make a curious use of this bird when young and very fat, by simply drawing a wick through the body and lighting it at the end which projects from the beak. This unque lamp will burn for a considerable period. Sometimes the petrel appears in flocks, and has been driven southward by violent storms, some having been shot on the Thames, others in Oxfordshire, and some near Birmingham. The general colour of this bird is scoty black, and the outer edge of the tertials and the upper tail coverts are white. Its length is barely six inches.

MARY STOVER took a dose of strychnine. A pet poodle licked her face while she was in her agony, and the poison on her lips killed the dog. The woman will recover.

Nor even the physician can know everything. When a doctor told a young man that he must go to the river side every morning for a bath the youth replied that the water at this time of year is too cold. "Well, you must have the bath," said the doctor, as he finished writing the prescription, "and if the water is too cold you must put your overcoat on."

Sanitary Reform.

The London Society of Arts recently discussed the feasibility of keeping a sanitary record of every house, so that the Health Board of a town should be able to give an intending purchaser or tenant a certificate of its healthworthiness. The debate made it apparent that, in the case of old houses especially, sufficient pertinent facts could not be obtained to justify such certificates.

It is easy to see how greatly they might affect the value of property; and therefore they would prove exceedingly mischievous and outrageous if they were not scientifically accurate. And that it is not possible to make them in every case, nor even in the majority of cases. Sanitary inquiry has certainly not yet reached a stage where it can point out with confidence the exact and immediate causes of disease, and fix the blame for them with absolute precision. We call it a science, just as we call political economy a science; but strictly, the term is of course misused. It may become a science, but the day is yet far off.

When municipal authorities assume to pass judgment on the healthfulness, and consequently the value, of the premises owned by individuals, they should be very sure of their facts, and that they have enough of them to form an opinion on. They can now point out remediable nuisances, and palpable defects in sanitary engineering; but if they undertook to give medical certificates as to the comparative healthfulness of the different houses throughout a town, they would be certifying to matters about which they are plainly incompetent to form an opinion of value. No dozen physicians would agree on the subject.

But, in his recent address before the American Public Health Association, Dr. J. S. Billings, its President, advocated modification of the plan suggested in London. He would have the health officer of a place obtain and keep a brief description of all its houses from a sanitary point of view. This would be merely a record of facts, to which individuals proposing to buy or rent houses could have access on the payment of a fee. The Health Board would express no opinion, but simply give a sanitary history of the property, its connection with sewers, the number and the causes of the deaths which had occurred in it, or in the square in which it was situated, and other information of that sort. It would be a sanitary supplement to the record of title, and of course might have a decided effect on the value of the property.

But Dr. Billings's plan, pretty as it is in theory, would involve so much minute detail that it would not be feasible in any municipal government on a large scale. To carry it out there would need to be a great multiplication of sanitary inspectors, and their official visits would become odious to the people. Moreover, the number of deaths occurring in a house may afford no certain indication of its condition as to healthfulness. People may take there the diseases of which they die, and an evil name be given a dwelling which it does not deserve. Property owners would justly cry out against a system of registration which put the value of their buildings in peril by following theories of the origin of disease which are not yet firmly established.

What is called sanitary science promises to become of the greatest benefit to communities. It has already demonstrated its value both here and abroad, for its tendency is obviously in the right direction—that of the prevention of disease. It has undoubtedly helped essentially to bring about the increase in the average of life which this century is showing; and it is not too much to expect that it will in the future obtain a pretty complete mastery over epidemics, though yellow fever and even typhoid fever now baffle its efforts to discover and remove their causes. But there is a growing number of men, laymen rather than physicians, for the most part, who make a hobby of sanitary inquiry, and treat it as if it was a fully fledged science against which there could be no reasonable rebellion. Dr. Billings has too high and justly deserved a reputation to lend himself to the support of the coteries of these fanatics; but such a proposition as his is likely to be run into the ground by them.

There is, however, a sensible effort now making to effect in part the end he would attain. It is to secure the passage of a law by the Legislature requiring that when specifications for building are filed, there shall go with them specifications of the plumbing and house drainage. These would enable an expert to form an opinion as to a

house's protection against sewer gas, and show him its sewer connections.

GENERAL

The town of Hull, England, is to have its streets lighted by the Siemens system of electric illumination.

The resumption of specie payments in Italy is opposed by capitalists and speculators in gold; yet a forced currency is no longer needed, as the country is peaceful and advancing in manufactures, and last year there was an excess of \$42,204,000 in receipts over expenses in the budget. Parliament has voted to adopt a resumption policy.

The famine in Russia, it is predicted, will assume proportions altogether beyond previous estimates, and no steps are taken to meet it. The Russian peasant cannot afford at the best of times to eat wheat, and this grain has been sold long ahead to the Jews and other middlemen. What is needed is an immediate importation of cheaper grain, if such can be obtained.

A new war has turned up in Asia Minor which feeds upon the eggs of the locust. Where a cluster of locust eggs is examined the destroying insect appears in the midst of them. Locusts from time immemorial have made themselves disliked in Asia, and the new bug, which is believed deposits its eggs in the live locust's body, has general sympathy and encouragement.

A scheme is under consideration for a canal across the Malayan Peninsula, by which it is believed that English mails may be delivered in Hong Kong in twenty-nine days and a halt, a saving of nearly seven days by the present route. The line would be from Bombay to Madras by mail, thence across the Bay of Bengal, and by the canal over the peninsula into the Gulf of Siam, and thence direct to Hong Kong.

ALTHOUGH Brazilian coffee makes up about one-half of the quantity produced in the entire world, it seems to be held of so little account in the markets that, to insure a sale, it has to be labelled as Java, Porto Rico, Ceylon, or Mocha produce. In the country there are no fewer than 350,000,000 plants, covering 1,500,000 acres, and yielding a crop of 260,000 tons of which 50,000 are retained for home consumption.

ACCORDING to the imperial budget, the German army on a peace footing, as supplemented by the accession of strength recently voted, now consists of 18,128 officers, 427,274 men, and 81,629 horses, the addition including 901 officers, 25,615 men, and 1,736 horses. Of these Prussia receives eight new infantry regiment and one battalion with one field artillery regiment, twenty-four field batteries, and one fortress artillery regiment, the rest being distributed in small proportions between Saxony, Wurtemberg, and Bavaria. The greater part of this new force will be garrisoned in towns nearer the Russian frontiers, an arrangement which is perhaps due to the existence of better barrack accommodation in the east than in the west.

ACCORDING to the St. Petersburg correspondent to the *Cologne Gazette*, a Supreme Council of State is to come into existence in Russia at the Russian new year. This council is to carry on all the business of the empire independently of the Czar, the latter retaining the decision only of questions of war and peace. His union with Princess Dolgorouki will be proclaimed as a legal marriage, with out her becoming, however, Empress. She is to receive the title of Duchess of Holten-Gottorp, and her children will be princes and princesses of the same name. Henceforth the Czar is expected to live with his family in retirement at Livadia, retaining Emperor in name, but, so far as Russian circumstances permit, transferring the cares of business to his son.

IN CLEARING away the remains of one of the ruined Basins of Yedi-koule, near Constantinople, the agents of the Prefecture discovered a large quantity of gunpowder, the existence of which was not before suspected. Information was at once sent to the Ordnance Department, whence an expert was despatched to examine the powder. Powder, strictly speaking, it was not, for the grains was as large as filberts; but a grain thrown into the fire showed that the composition was of a highly explosive character, but the expert could not precisely determine what the quality was without submitting it to analysis. The powder is believed to have been deposited where it was found prior to the conquest of Constantinople by Mohammed the Second.

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TORONTO, ONT., JANUARY 15, 1881.

HEMLOCK TREES AND BARK.

In view of the fact that the pine is being rapidly stripped from the districts of Muskoka and Parry Sound, a Bracobridge correspondent thoroughly familiar with the subject, calls our attention to the great destruction of hemlock, which is taking place in those districts to supply tan bark. He estimates that there are about 10,000 cords of hemlock bark peeled annually in that region, and assuming that seven trees of an average diameter of 13 in., and 36 feet in length will furnish a cord of bark—would equal 3 saw logs of 13 inches diameter, which by Scribner's rule gives 219 feet of lumber: or 10,000 trees would make 15,320,000 feet. This has been going on for the past four years, so there must have been 61,320,000 feet of lumber felled during that time, but not more than one million feet of this large amount has been manufactured into lumber. The balance has been left to rot in the woods, or which is far worse, to make kindling-wood for the first bush fire which may happen to break out near by, and which might destroy the greater part of the valuable pine or hemlock left standing. As long as pine stumpage is cheap, and as long as pine can be obtained, no one cares to go into manufacturing hemlock lumber; and as tanners must have bark the waste will go on and the wood left useless. A portion of this bark is peeled on patented lands, but the greater portion, our correspondent says, is cut on Crown Lands without leave or license, and it is about time the government took some steps to stop this waste, as the day is not far distant when hemlock will be of more value than the pine now is. In some places, the bush is so slashed down that the refuse seriously interferes with getting out the pine.

We trust the local member for Muskoka will give the matter his attention. Hemlock may yet be required to form a plank of the Commercial Union with the United States, advocated by that honorable gentleman.

GENEROUS.—Messrs. Rathbun last summer, when the men in their employ at the Eagle Mill, Ferry Point, threatened to strike for higher wages, promised if they would not do so, to divide \$500 among them at the close of the season. The promise was kept, and the money divided among two men at Christmas.

DYES FROM SAW DUST.

Mr. John Blair, of Ardree, near Orillia, writes to the Times, and says he noticed in a late issue of that paper, an article devoted to the description of a new process whereby certain waste products, such as sawdust and decayed wood are converted into dyes of various shades. Some three years ago, he continues, I discovered and perfected a process for the manufacture of dyes from sawdust, wool, hair and horn. At that time I furnished several leading chemists with samples of the new substance, which on account of its close resemblance to certain products formed from indigo is of considerable interest. This compound (which I have termed xanthogen) can be manufactured in large quantities from sawdust, or from almost any organic material. One ton of sawdust when transformed into xanthogen would be worth at least \$500; and the same weight of old woollen rags when subjected to the same process would be worth more than \$2 000. The above estimate would seem incredible were it not that I am in a position to verify its truth. It will be seen from these figures that there is a mine of wealth in sawdust and old rags for the enterprising capitalist. There are many other ways in which sawdust can be utilized, as for instance in the formation of Prussian blue. A mixture of saw dust, iron filings and a small percentage of potash if heated in an iron retort till all the volatile products pass off, and then if the retort be cooled so as to exclude the air and the heat raised so as to fuse the contents, and then if a current of pure nitrogen gas be passed through it the iron will at once be converted into Prussian blue. The nitrogen gas can be easily obtained from the atmosphere by passing a current of air through ignited charcoal and afterwards through a column of iron ore which is to be kept heated to a temperature of 2,200 Fah. After the heated gas passes through the ore the carbonic oxide is converted into carbonic acid and the ore is reduced to a spongy metallic state, and we have now a mixture of C.O2 and nitrogen, which when stored in a gas meter through which lime water is circulating, removes the carbonic acid and pure nitrogen gas remains. This gas can be used as above stated, and the spongy iron, after it ceases to act on the carbonic oxide is then in a fit state to be converted into Prussian blue.

DEFERRED NOTES.

Before the Christmas holidays we had occasion to make a trip westward as far as Windsor, and being so near that great and beautiful frontier city—

DETROIT,

we crossed to see how our cousins were getting along. Business was lively in almost every branch,—manufacturing, building, buying and selling. Uncle Sam was gay and happy. Immense quantities of provisions and lumbermen's supplies were being sent north. The train for Bay City was loaded with shanty-men. The local prices of lumber had not changed much from former quotations, but were firm. Re-crossing to

WINDSOR,

the people there, too, were full of business. The ferry boats are doing a large business, transporting teams loaded with cordwood and other produce from Canada for the Detroit market. A few manufacturing firms from Detroit, as will be seen by reference to our advertising columns, have established branches of their business in Windsor. This is to save the import duty, which with the improved and increased manufacturing facilities in the Dominion enables our manufacturers to compete on equal terms with those in the United States. About a mile up the river is

WALKERVILLE,

founded, and in a great measure sustained by H. Walker, Esq., the extensive

distiller there. His establishment is only second in Ontario, to that of Messrs. Gooderham & Worts, of Toronto. Every department of the distillery is in the best of order and condition. The machinery for grinding, mashing, pumping, &c., and a magnificent engine of 200 horse-power with a fly wheel weighing nearly eleven tons—crank shaft 12 inches in diameter, a 20 inch cylinder of 42 inches stroke were manufactured and put in by the Kerr Brothers of Walkerville, who have a foundry near by. The water works of the distillery, worked by a 100 h. p. engine, has three large pumps, said to be capable of drawing from the river 900 gallons of water per minute. The establishment has eight run of millstones in operation, and pays about \$350,000 per annum duty into the Dominion treasury. There is considerable traffic in this neighbourhood in stave lumber, and some oak is brought in.

CHATHAM

was our next stopping place. This town has grown rapidly within the past few years. The large lumber yards are well stocked with lumber and shingles. The largest is kept by Messrs. H. A. Patterson, & Co., who also manufacture sash, doors, &c. There are several manufacturers of engines, boilers, brass castings, &c. Mr. D. Park has invented a machine for making barrels, including the heading. We expect to be able to explain this machine more thoroughly with the aid of a cut or drawings, shortly. Mr. R. Parkinson's establishment, the Reliance Engine Works, is also worthy of notice. Chatham can boast of some excellent flouring mills, which supply "the staff of life" to the population, whether white or coloured.

Again aboard the comfortable but somewhat crowded cars of the G. W. Railway, and

THE CITY OF LONDON

is soon reached. Here again all is bustle and activity. Building to a considerable extent is going on. The lumber yards are tolerably well stocked. Prices are keeping well up. A visit to the lumber dealers and some of the manufacturers filled up all the time at our disposal. The people seemed contented and prosperous. We met Mr. McRae, of Glencoe, who is getting out a large quantity of oak timber this season. He reports the season's work well advanced. A short run on the branch line brings us to

ST. THOMAS,

a thriving town, the proposed terminus of the Credit Valley Railway. The town is growing rapidly, and will continue to increase in importance. It has a large number of planing mills and manufacturing establishments. The Dexter Manufacturing Co. of best carriage and sleigh work are enlarging their premises; C. Norworthy & Co. have constructed a tramway engine, to draw logs and timber on pole roads. It is to work in Essex Centre, where 14 miles of track has been laid. We have no doubt the flange driving wheels carrying the locomotive will work well. They are constructed to slide on small steel rollers along the axle to accommodate irregularities in the width of the track, but at the same time are stationary on the axle as far as revolving with it is concerned. The stock of lumber on hand in St. Thomas is large, but as the demand is good both in town and country, it will be all required before next year's stock comes in. The farmers in the neighborhood generally are wealthy. We had a pleasant visit with one of them, whom we had not seen since we crossed the Atlantic with him from Aberdeen, over 34 years ago. Resuming our journey by way of Harsburg, we stop at

THE CITY OF BRANTFORD,

when limited time only enabled us to visit

the works of the enterprising firm of Waterous & Co., whose steam engines, saw mills and other numerous and excellent manufactures are known all over the Dominion. Next we call at

DUNDAS,

which presents a beautiful view from the railway station. With the exception of the cotton factory, Messrs. McKeechie & Bertram's establishment, which turns out all sorts of machinery, and has just been enlarged; an axe factory and planing mill, there does not seem to be much going on in that town. Its proximity to

THE CITY OF HAMILTON

has perhaps something to do with this. Business is good in Hamilton. Manufacturers say they have orders on hand to keep them employed until spring. Building has been continued during the winter. Merchants are in good spirits. Workmen have plenty of work, and some new manufacturing industries are about to be established. A run by the Northern Railway brings us to

ORAVENHURST.

This is a lively village and prosperous. Its prosperity is chiefly owing to the number of saw and shingle mills in the vicinity, and to its being the terminus of the Northern and Northwestern Railway, where, during the winter season, all freight for the northern region is reloaded, and drawn by teams. The summer trade is mostly carried past, by the steamers, to Bracobridge and Rosseau. Several lumbering establishments have branch offices here. Some idea of the quantity of supplies required may be formed from the following list of lumber to be got out this winter in the Muskoka and Parry Sound Districts:—

Table with 4 columns: Location, Logs, Square, Shingles. Lists lumbering establishments like Georgian Bay Co., British Canadian Lumber & Timber Co., etc., with their respective quantities.

Messrs. Thompson, Smith & Son are also getting out 25 million feet at their Duncan City mills, Mich. Last season they cut 15 million feet at their Bradford mills; 2 million at the Barrie mills, and 22 million at Duncan City mills. Their stock on hand is Bradford mills, 6 million; at Duncan City mill, 10 million; Barrie, all shipped. They employ about 600 men and 150 teams. The Muskoka Mill & Lumber Co., last season cut 15 million and have on hand 4,500,000 in lumber and 6,000,000 in logs.

BRACOBIDGE

This is the winter head quarters of the British Canadian Lumber & Timber Co.,

formerly H. H. Cook & Co. Mr. Robt. Dollar is in charge, and has every thing in good working order.

PARRY SOUND.

This important village seems rather dull in winter, but it will have a large share of the advantages of the lumber trade when spring opens.

A BRANCH RAILWAY

to connect with the Ontario & Pacific Junction. This would place their fine harbour in direct communication with the North West.

M'KELLAR'S FALLS.

The Messrs. Armstrong are doing a large business here, in this lumbering centre. They have large contracts getting out logs, keeping about 150 men at work.

Other "deferred notes" must be left over to another issue.

Toronto and Nippising Railway.

This convenient line of railway has been doing a good business during the past year. The lumber carried over the line is as follows:

Jan'y. 574,000 feet. Feb. 286,000. Mar. 402,000. April. 538,000. May 477,500. June 605,000. July 658,000. Aug. 766,500. Sep. 890,000. Oct. 673,500. Nov. 530,000. Dec. 305,000. Total 6,856,000.

The shipments were from Coboconek, Victoria Road, Kirkfield, Uxbriige, Goodwood, Stouffville, Ballantrac, Vivian and Sutton. Should the new mills, contemplated be put up in connection with Gull River, a large trade will be done from Coboconek this year.

LUMBER DRIVING.—In New Brunswick, lumber merchants are alive to the importance of organization in boom accommodation and river-driving.

A company similar to the Muskoka Boom and Slide Company is about to be formed to conduct operations on the Miramichi River. The Miramichi Advance referring to the subject says:—"If logs are beyond certain points up-river the complications which may arise in driving, seriously affect market values, for the time when delivery can be made, through the booms at the mills, is a very important consideration.

Up to the present time it has been in the power of any operator—large or small—to impede the progress of logs to market by not attending promptly to his own drive when it became mixed with those of others. Only last season, 20,000,000 feet of logs were kept out of the market for months in this way and as the business becomes more divided up or new operators come in the danger of interference with the regular log-supplies coming down to the mills will increase.

Shipments from St. John.

A late St. John's Globe says, the shipments of deals from St. John to Europe and Australia during the year just ended were very large, exceeding by a large amount the shipments in the two past years, and not being far behind the shipments in 1877.

Table with 2 columns: Year and Superficial feet. Data for 1876-1880.

The improvement in the English wood market early in the year gave an immense impetus to the shipment of deals the past season, and, as is seen above, nearly sixty million more feet were sent forward than in the previous year with the result that the market was overstocked, and prices, in consequence, fell.

The stock of deals on hand now is comparatively small,—being in the vicinity of twenty million feet, and as there is no immediate demand the shipments for some time will be very light. A very busy season is expected next year, however.

LEATHER MANUFACTURES.—The Amherst

Gazette says:—The manufacture of various kinds of leathers and their products form an important part of the business of our town. Mr. Casoy now employs fourteen hands in his tannery, and the leather on hand, in various stages of manufacture, represents a large value.

WOOLEN MANUFACTURES.—The value of the

annual product of the woolen mills in the Dominion of Canada is estimated at \$7,000,000. The Monetary Times has received estimates from 79 mills whose products amount to \$4,250,000.

A NEW ARTICLE OF EXPORT.—Several car loads of sawdust have been shipped lately over the St. John and Maine Railway.

IMPORTANT STATISTICS.—The following is a statement of exports from Canada to Chicago by lake during the seasons of 1879 and 1880:

Table with 2 columns: 1879 and 1880. Data for Lumber, Ties, Posts, Telegraph poles, Tan bark, Wood.

Statement of exports from Collingwood to Chicago by lake during the season of 1880:

Table with 2 columns: 1880. Data for Lumber, Ties, Posts, Telegraph poles, Tan bark, Wood.

By a comparison of the above figures it will be seen that Collingwood shipped to Chicago during the season of 1880 one-quarter of all the ties; over one-third of all the posts, one-thirtieth of all the telegraph poles, and nearly one-quarter of all the tan bark received at that port by lake during the season.

SHIPPING AT ST. JOHN.—The St. John Globe gives the following statement of shipping on the registry books, St. John, at the close of each year during the last quarter of a century:

Table with 3 columns: Year, No. of Vessels, Tons. Data from 1856 to 1880.

SITUATION WANTED.

SCOTCHMAN, CAPABLE OF RUNNING A SAW Mill any capacity, 18 years experience, best of references. Address, Editor LUMBERMAN.

AUCTION SALE

Saw Mill, Wood and Iron Working Machinery.

JOHN McFARLANE & CO. HAVE RECEIVED instructions from Wm Dingman & Co to sell at their Warerooms, 55 Front St. E. st., On Tue-day, the 18th of January, the whole of their stock, consisting of Stearns's No. 3 Circular Mill, Lox Canter, 68 h.p. Engine, Planers, Drills, saws, &c. Catalogue on application.

HAYTER STREET Wood Turning & Sawing Factory 33 Hayter Street, Toronto.

JAS. F. HAINES,

WOOD TURNING, BAND & SCROLL SAWING, SHAPING, &c., &c. Piano and Organ Fret Sawing a specialty. All orders executed on the shortest notice.

Central Prison Industries. Thursday, the 20th January, instant. 1500 Cords of Pure Hemlock MIXED SOFT WOOD, In equal quantities, (300 cords to be drawn) to be delivered to the CENTRAL PRISON, BIRD RYARD, TORONTO, on or before the 1st of May next. J. W. LANGMUIR, Inspector of Prisons & Public Charities, For Lumber Yard, Toronto.

MUSKOKA Slide, Dam & Boom Company

Orders for the following works on the Muskoka waters will be received until 1st of February next: 1 Saw, Pier at McCabe Falls, 2 Two Dams at Coburn Falls, 3 Dam and Boom at Duck Chute, 4 Slide and Boom at Watson's Falls, 5 Slide and Pier at Brantford, 6 Dam and Slide on Buck River, 7 Slide at Woodstown, 8 Slide at Gray's Chute, 9 Booms and Piers at Gray Lake, 10 Booms at High Falls, 11 Piers, Booms, and Culverts Muskoka Lake, 12 600 pieces of boom timber to be delivered on Muskoka Lake. Works to be completed before the opening of navigation, 1st. Tenderers must give security. The lowest or any tender not necessarily accepted. Plans and specifications can be seen after 16th. of January at the office of R. DOLLAR, Manager, BRACEBRIDGE.



CHAS. M. LARSEN Manufacturer of all kinds of Lacquered and Enamelled Woodwork, Turning and Carving in WOOD, HORN, AND IVORY.

BILLIARD BALLS

Turned and coloured a specialty. Also Mechanism and Amber Goods repaired in first class style.

77 1/2 King St. West, Toronto, Ont. GLASS BALL CASTORS

FOR FURNITURE, PIANOS, ORGANS, &c., the best and most permanent Glass Castors in the market. They greatly improve the tone of music. RHEUMATISM, NEURALGIA, BRUISES, SLEEPLESSNESS cured by massaging with our Castors. Sold by all hardware dealers. Agents wanted.

ADDRESS FOR CIRCULARS: Glass Ball Castor Company, 44, 66 & 68 REBECCA ST., HAMILTON, ONT.



The UNIVERSAL SUSPENDER. SOME REASONS why they are the best:— 1st.—No Elastic required. 2nd.—Is slack when standing. 3rd.—It never slips off the shoulders. 4th.—Sold at prices of common suspenders. Manufactured by C. E. RAMAGE & CO. 90 BAY STREET, TORONTO.

Learning to Skate.

It is a mistaken idea that skating is similar to dancing, and as readily acquired. The surface of the ice is dissimilar to that of a waxed dancing floor, and the inch or two height of the skate—the difference between the runner of the skate and the sole of the shoe in bearing surface; the fine balance of the body required to preserve the equilibrium; the knowledge of the right swing and place of the unbearing leg; the position of the head and shoulders, and the direction of the eyes—all relating to the centre of gravity and governing the direction of the skater, are matters to be studied. Knowledge to be acquired, and to be carefully observed in all movements in skating, which is mathematical to a vast extent upon the ice skate, and perfectly so upon the Plimpton roller skates, which cannot be forced out of a true curve or straight line, while the ice skate can. Therefore it becomes every one who anticipates the acquirement of the art of skating to enter upon it not only as a pastime, but with the certain knowledge that the acquirements of the various movements demand close study and application. "Practice makes perfect," particularly in skating.

We do not wish to discourage those who would learn to skate. On the contrary, a knowledge of the obstacles to be surmounted communicated at the outset will prevent discouragement later on.

Remembering that the possessions that most endeavour are most dearly appreciated, you will realize that the skating movements that demand the most labor are prized most highly when acquired. Go at skating with an inquiring turn of mind. Ask why the unbearing leg should be behind in executing the outside edge roll forward and why in front in the inside edge backward, and the many other curious questions arising in the mind of the learner, and solve the riddles, or ask others to do so, until the law is explained, and the proper position will be involuntary.

Whatever you do, do it well, and learn but one movement at a time, taking the simplest first. This would seem to be foolish advice, but look into it. There are skaters who cannot skate the inside edge roll forward or backward who pretend to do the Bishop's, Mercury, flying scud, grape vines, one foot Sand loops, in each of which the inside edge must be introduced to render the movement complete. There are many who have educated the right foot to the execution of certain movements, and kept the left in ignorance. These are not good skaters. Make your skating perfect by commencing on the first round of the ladder, get firm hold of that before starting for the next, so that when the top is reached you can retrace your steps when necessary. The simplest movement, the plain forward, as well as the edges, enter into every complicated combination. You might as well attempt to read without the knowledge of the alphabet, as to skate any movement without proficiency in the rudiments. Therefore perfect yourself in the plain forward, then both the inside and outside edges forward and backward, then the three and you have the elements of all the movements that can be formed upon skates. In respect to

PRACTICE.

we would recommend its commencement in the house, in order that you may accustom yourself to the "feel" of the skate and get some idea of "balance."

"Having properly adjusted your skates stand with your heels together and feet at right angles to each other, body erect, leaning slightly forward, arms hanging loosely at the side, eyes gazing at some object twenty feet or more in advance, legs touching each other, shoulders thrown back and breast expanded full forward.

Never look down at your skates, or you will throw yourself out of position and balance. Study this rule and accustom yourself to observe it.

2. In skating, the propelling power generally comes from the unbearing leg or the leg which does not bear upon the ice; therefore place the heel of the right into the hollow of the left foot, take one short step forward upon the right, at the same time swinging the body well forward upon the right foot, making that foot bear the weight of the body.

3. Bring the heel of the left to the hollow of the right; advance one step with the left foot, throwing the body forward upon the left.

These movements constitute "plain forward" skating. Practise thoroughly until

it can be done with ease, and without liability of the body swaying to either side so as to lose the perfect balance. If your left is weaker or more disinclined to work than your right foot, use it until it is taught to perform its work and become as perfect as the right.

After practising this movement until you have reached a run, keeping the body well over the skate, the toes well turned out, and not allowing the off foot to touch the floor, take the next movement.

4. Place the heel of the left opposite the hollow of the right with the weight of the body upon the left. Raise the right carefully and carry it over the left to the opposite side, throwing the weight of the body upon the right foot. Raise the left and carry it to the first position. Repeat this, moving in a circle, going from right to left. Reverse the direction by placing the left over the right and walking in a circle.

This movement is called the "lap foot" forward, and is a material aid to the movement which follows. Practise it thoroughly before attempting the next, and don't be afraid to lift your feet well up and bend the knees as in a walk around.

5. Stand with your toes turned in and your feet at a right angle to each other. Raise the left foot about five inches from the floor, slightly bending the knee, carrying the left well over and in front of the right, and placing it upon the floor in this position throw the weight of the body upon the left foot. Raise the right and carry it well over and in front of the left. Continue this movement until perfect and you will have accomplished the "cross-roll" forward.

This movement needs thorough practice to accustom the ankle to the turning in of the foot.

6. A backward movement, necessitating a different position of the body. Stand with the shoulders thrown backward, the body leaning slightly backward. Be very careful to observe the position, and if you desire to spoil the movement and lose your balance, lean forward. Place the heel of the left opposite the hollow of the right, the weight of the body upon the right. Raise the left and carry it behind and well across the right, letting the weight of the body come upon the left foot. Raise the right and carry it to first position. This will take you to the left, continuing which will form a circle. Perform the movement in the opposite direction by placing the right behind the left, instead of the left behind the right. Above all, lean backward, because it will preserve your equilibrium and is the proper position of the body. This movement is the "lap-foot" backward and needs much practice.

7. Heels together, feet at right angles and weight of the body upon the right foot. Carry the left back of and well over to the opposite side of the right, throwing the weight of the body upon the left. Raise the right foot and carry it around, back of, well over and to the opposite side of the left. Lean backward and practise this thoroughly until it is as easy as walking, and you will have accomplished the "cross roll" backward, one of the most beautiful movements upon skates, when properly executed.

Other movements can be practised in the same way in the house, but if the learner will perfect himself in these, he will find the practice of the utmost value to him, and the performance of the movements on ice a simple matter. Let body and limbs be elastic, knees readily bent, ankle loose, arms at the side, hands not clutching at vacancy, but open with the palms facing the body, knee of the performing leg always slightly bent, every movement lightly and gracefully executed, without apparent effort; and above all, never look down at your skates.

A FOUR-YEAR-OLD child, saying her prayers at her mother's knee, having concluded as usual, with "God bless papa and mamma, grandpapa and grandmamma, uncle and aunt," etc., gave a great sigh, and said: "O mamma dear, I do wish these people would pray for themselves, for I am so tired of praying for them."

THE 3-year-olds belonging to Lord Fal-mouth did so lately in all the great races of the season that one is hardly prepared to find him standing for the fifth or sixth time in the last ten years at the head of the winning owners in England. But thanks, in the main to the eight victories of his 2-year-old filly, Bal Gal, who has won more money than any animal of her age ever did before, she occupies this position with a total of £16,061 won in twenty-one races. Of this total Bal Gal has secured more than half.

Further from Mauna Loa.

CONTINUANCE OF THE GREAT VOLCANIC ERUPTION IN HAWAII.

The Chinese merchant steamer Ho Chang, which arrived at San Francisco on the 16th ult., brought the Honolulu (Hawaii) *Gazette* containing further details of the great eruption of Mauna Loa and other volcanoes nearby. Clouds of dense smoke had hidden the mountain the greater part of the time, but those who had visited the scene described it as grand and awful beyond the power of words to express. The eruption has now continued for about six weeks, and the lava stream had reached the woods near Hilo. From Kilauea it is reported that the stream has changed its direction, and the Kapela sugar plantations, for a long time regarded as in danger, are now considered safe. Reports are up to the 6th of December, and show the most active flow now is that running from near the summit of Mauna Loa in a northerly direction towards Maunaloa. Clouds of smoke envelop the mountains, but at times they lift, showing the red rim of lava moving down the mountain. On Nov. 20, which was a very clear day, the eruptions were plainly seen from their craters. Those watching the mountain from Hilo on that day about dusk saw a sudden explosion from one of these craters. A vast column of material was suddenly thrown several hundred feet in the air; several days after, another clear day showed that the summit of the mountain has undergone much change. Three craters, each separated by about a mile, were seen, and each seemed intensely active. A correspondent who went up on the mountain near the base of the flow says: "The lava has flowed about 25 miles towards Hilo, and is now in the neighbourhood of 20 miles away. It is from a quarter to half a mile on the upper part of its course, and lower from three-quarters to a mile wide. It has entered the woods on one side, and as it rises high above '55 flow,' which is specially high at this point, its motion looks threatening enough. I did not see any portion of it in motion at the lower end, but concluded that the motion was at the centre and of a rotary nature, rolling masses of clinstone to either side and forming great piles as it rushed along. I saw no trees burning, though the stream had advanced into the upper road. My theory is that the head of the stream is not molten, the liquid lava being underneath, and that progress is made now, although not open, running down the mountain, thereby throwing congealed and congealing masses ahead like puppet balls, pressing down trees and immediately burying them as the river of stones moves on. While all this is going on old Kilau Mountain maintains its ancient reputation, and its three lakes are in most intense activity, each vying to surpass in brilliancy and beauty former displays. Streams frequently flow from them, but with no regularity." Parties are visiting the new eruption every day, and from this side can approach the stream and ride along almost its entire length of 18 or 20 miles within a few feet of it. The combined length of the two streams, the northern and the eastern, cannot be less than 40 miles. One party has even ventured to sleep on a spur of the new stream, enjoying its warmth and a good nap.

Inaction.

Great evils result from physical inaction. It is well known that through the whole human system, strength and development come only by exercise. Every unused muscle shrinks in size and loses its force, and the man or woman who lives chiefly a life of passive repose will gradually lose the power as well as the desire for activity. This, however, is by no means the whole of the evil involved. The connection between the mind and the body is very intimate, and the mental faculties cannot obtain their full power, nor the character attain its highest excellence, unless the body be kept in healthful condition by salutary exercise. Pure air and regular physical exertion are necessary in order to think clearly, to decide wisely, to reason acutely, to plan with discretion, and to execute with vigour. Strength of will depends largely upon strength of muscle, and he who is weak and flabby in the latter will in all probability be feeble and irresolute in the former.

THE Duchess of Westminster died of Friday evening at her residence at Bournemouth.

Cold-Footed Woman.

Says Dr. J. H. Handford in the "Laws of Life": "The question is sometimes asked 'Who ever knew a woman to have warm feet?' The Dr. thinks this is a so no what extreme view of the matter, but still he decidedly takes the ground that women, as a class, are victims of cold extremities. With the gallantry that impels every true man to defend womankind, I at once thought when I read the Dr.'s opinion that it must be explained on the principle that cold hands and a warm heart go together. Probably the feet obey the same law, contrary. But alas! this pleasant theory is run out. The Dr. ascribes the cold feet of womankind to the foolish habit of wearing thin and tight boots. For this folly, as is chiefly responsible. Almost universally, human beings of the male persuasion adore small feet in women. It is an absurd thing to do, but mankind are absurd in many respects. I never could see the special charm of a small foot, but I never was, technically speaking, "a lady's man." A pretty face never inspired me with rapture, unless there were intellectual and moral qualities to match. If a woman has a good mind and a good heart; she may wear a No. 10 boot for all that I care. I would look at the eyes beaming with intelligence and goodness, and never think of her big feet. But it is different with the majority of men. And woman, with that readiness to sacrifice herself to please the other sex, which is characteristic of her, will endure untold tortures to secure the winning claim of "dear little feet." Dr. Handford very ungallantly says: "The false idea of the necessity of a small hand and foot may depend on the corresponding smallness of the brain." I would rather ascribe it to the largeness and softness of the heart. But, be that as it may, the prevailing custom results in cramped, crippled, deformed, cold feet, and the sooner it is abandoned the better it will be for female health and comfort.

The Irish Secretary.

The face of Foster, the Irish secretary, is not, says Pan, an exact index of his mind. He looks unbending, even morose. It is as if he put on the grimace of what he would wish to appear. There is an air of faded ruggedness about his large and irregular features. His bridgeless nose is thick and round in the region of the nostrils, his cheeks are wide and full, his anxious eyes are deep-set beneath a massive forehead brow seamed with thought and half covered with pale patches of hair, combed down carelessly from right to left. He wears a ragged red and gray beard and a mustache—which gives the chief point of character to his face—cut close to the top of the upper lip, straight across from corner to corner of a wide mouth. Tall and somewhat fleshy, with large feet and hands, and long legs that are loose from knee to ankle, he walks with quick, uncertain strides, and sits with his body forward, toward the edge of the seat, his chin on his breast, his eyes cast down, and his hands clasped across the region below the bottom of his waistcoat.

For a man 62 years of age, Mr. Foster displays extraordinary physical vigor. In the execution of his office he seems indifferent to fatigue and impervious to its effects—unless, indeed, an occasional nap on the treasury bench can be counted against him. His manner of answering questions is short, to the point, and in extreme cases, somewhat imperious. His ordinary voice, however, falls pleasantly upon the ear; it is that of a scholar and a gentleman; and when roused to an effort of oratory, few men in the house are more impressive than the rough but accomplished Yorkshireman and worsted manufacturer. Five years ago he was at the zenith of his fame, and might have been prime minister of England but for his inveterate habit of shilly-shallying. He could not make up his mind that the party would follow him.

LORD BEACONSFIELD sent a presentation copy of "Endymion" to the Queen, to which she devoted immediately her first mornings after her return from the Scottish Highlands. The only other ladies who received this distinction were Lady Chesterfield, who is a special friend of Lord Beaconsfield, and whose late husband was an associate of his in his youth, and Lady Bradford, who is her sister. Lord Beaconsfield visits their country seats every season.

The wife and sons of the Russian grand duke Nicholas are guests of King George at Athens.

Muskoka District.

LUMBERMEN'S SUPPLIES.

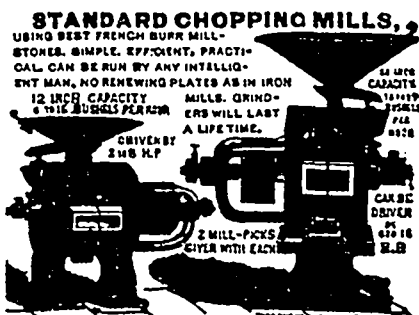
To meet the demands of the LUMBERMEN IN THIS DISTRICT I have opened out a

WHOLESALE SUPPLY DEPOT

At BRACEBRIDGE, where everything in the shape of Lumbermen's supplies or Furnishings, can be obtained in large or small quantities, at wholesale rates.

Outside quotations or correspondence solicited.

F. W. JEFFERY.



Guaranteed to grind any kind of grain, fine or coarse, equally as well, as a four foot millstone.
WATEROUS ENGINE WORKS CO., BRANTFORD, CANADA.

Make your own Flour with our Portable Grist Mill.

PRICE, Grist Mill complete, \$600. Capacity, One and a half barrels of good flour per hour.

Send for particulars, address

Waterous Engine Works Co.,
Brantford, Ontario, Canada

BRYCE BROTHERS,

ST. LAWRENCE

LUMBER YARD!

Corner Berkeley and Front Streets, Toronto.

Planing Mill, No. 57 Ontario St.

Mills at Elmvale.

WHOLESALE AND RETAIL DEALERS IN

LUMBER, SASH, DOORS, BLINDS, &c.

Largest and Best Stock of Lumber in the City at Lowest Prices.

WE HAVE CONSTANTLY ON HAND A LARGE STOCK OF

SASH, DOORS AND BLINDS, ETC., ETC.

Which we sell at Lower Rates than they can be had anywhere else in the City,

SPECIAL ATTENTION GIVEN TO FILLING OF BILLS OF EVERY DESCRIPTION.

Houses built on easy terms of payment. Houses to rent or for sale in any part of the city

Best price paid for Lumber of all kinds, cedar posts, &c.

G. B. MEADOWS,

Manufacturer of and Dealer in

Lumbermen's Supplies,

Hotel & General House Furnishing Goods, Cooking Ranges & Stoves.

HOT AIR FURNACES, &c.,

Wholesale dealers in Tinware, Sheet Copper and Brass Goods, Coal Oil and Lamp Goods. Contractor for Builders' Job work.

DUNLOP STREET, Corner Railway Square

Barrie, Ontario.

M. BRENNEN,

MANUFACTURER AND WHOLESALE DEALER IN

Lumber, Lath and Shingles,

63, 65 and 67 King William-st.,

HAMILTON, ONT.

Mills and Timber Limits at Silver Creek, Tago P. O., Ont.

Bill Stull cut from 10 to 60 feet. Cedar Posts on hand.

Orders sent to M. Brennen, Tiago, P. O., will receive prompt attention.

THE GENUINE

Silver-Steel, Lance-Tooth Cross-Cut Saw!



It stands without a rival, and is the fastest cutting saw in the world. It has beaten the best Canadian and American-made saws 33 1/2 per cent. in every contest. Its superiority consists of its excellent temper. It is tempered under the Secret Chemical Process, which toughens and refines the steel. It gives a finer and keener cutting edge, and will hold it twice as long as any other process. We have the sole right for this process for the Dominion of Canada.

None genuine that are not like the above out, with registered trade mark with the word "The Lance," and Maple Leaf with our name. Price \$1 per foot.

CAUTION.— Beware of Counterfeits. There are inferior counterfeits on the market, which are intended to be sold at a high price upon the reputation of this saw. We will send to any address a saw exactly like any counterfeit, warranted equal in quality or no sale, at 60c. per foot. Therefore do not be humbugged into paying a first class price for a second class saw. A fact to bear in mind is that if the material and temper are not of the very best quality the shape of the teeth amounts to nothing. A saw, like a knife, will not cut fast without it will hold a keen cutting edge. We have cut off a 14-inch round basswood log in eight seconds with this saw.

Manufactured only by

SHURLY & DIETRICH.

Manufacturers of Saws, Plastering Trowels, Straw Knives, &c., &c.

GALT, ONTARIO.

December 10, 1880.

ALLANDALE JUNCTION HOTEL.

Travellers by Northern Railway have 15 to 20 minutes by all trains, for refreshments. Solid meals. Tea and coffee at counter. Fine brands of liquors and choice cigars

F. S. MEERING Proprietor

ST. LOUIS HOTEL.

THE RUSSELL HOTEL CO., Proprietors.

WILLIS RUSSELL, Pres., Quebec.

This hotel, which is unrivalled for size, style and locality in Quebec, is open throughout the year for pleasure and business travel.

ST. LAWRENCE HALL.

FORT HOPE

Is noted for its superior home-like comforts—a well kept table, equalling the best Hotels in Toronto, and large, well furnished rooms. Good sample rooms on ground floor. Walton Street, Fort Hope.
Wm. Mackie, Proprietor.

FRASER'S HOTEL.

GRAVENHURST, ONT.

HENRY FRASER, proprietor (successor to Douglass Brown) Mr. Fraser having purchased and thoroughly renovated and refitted that old established hotel, so long and popularly kept and owned by Douglass Brown, in the village of Gravenhurst, is now in a position to attend to the wants of the travelling and general public. Parties en route to the Muskoka District, will find "Fraser's" a comfortable stopping place. The Bar and Larder are well furnished. Convenient Sample Rooms for Commercial Men. Good Stabling and attentive hostler. Free bus to and from trains and steamboats.

HOTEL OTTAWA,

No. 21 North Side King Square.

ST. JOHN, N. B.

E. COSMAN, - - Proprietor.

Terms, \$1.00 to \$1.50 per day.

THE RUSSELL HOUSE,

OTTAWA,

JAS. A. GOVIN, - - Proprietor.

— IS THE —
Favourite Resort of the Leading Public men of the Dominion attending the annual Sessions of Parliament.

Ministers of the Crown, Senators, Members of Parliament, Public Officials, as well as those having business with the various Departments of the Government. It is also the headquarters of those having dealings with the princely Lumber Manufacturers in the great Pine Valley, of which Ottawa is the acknowledged centre.

The Russell House being central, almost abutting on the magnificent PARLIAMENT and DEPARTMENTAL BUILDINGS—the pride of the Country—is thus conveniently situated for those visiting the City on public business. But the location is also everything that could be desired for the man of business and the man of pleasure. A few minutes walk brings the guest of the Hotel within reach, not only of all the principal business resorts, but also of the most splendid Mountain and Valley Scenery that can be seen anywhere, as also of the two almost unrivalled Waterfalls—the Chaudiere and Rideau—and of the extensive Manufacturing Establishments and Depots of the locality. Lumbermen, too, besides the beautiful scenery, which, it may be mentioned, includes the magnificent Ottawa and two of its grand tributaries—the Rideau and the Gatineau—there are in the immediate neighbourhood, beautiful Lakes and apparatus for catching fish, which afford opportunities for the finest fishing and shooting that can be obtained in the Continent.

The Russell House affords excellent accommodation for "strangers"; its table is abundantly supplied with Viands of the choicest description, in season, and nothing is left undone to make every visitor feel comfortable at home.

Omnibusses meet the Arrival of every Train and Boat.

MARKET REPORTS.

CANADA LUMBERMAN OFFICE, TORONTO, 13th Jan. 1881.

Business has been steady during the past week. Orders from western villages and towns, however, are coming in freely, and stocks are keeping up from northern and eastern arrivals.

TORONTO.

WHOLESALE RATES.

Table listing various lumber products like Mill culls, Shipping cull stocks, Dressing incl., etc. with prices per unit.

LONDON, ONT.

RETAIL RATES.

Table listing lumber products like Common Lumber, Stock boards, Clear in. and 1 1/2 to 2 in., etc. with prices.

OTTAWA.

Table listing lumber products like 12 in. stocks, good, 12 in. S. culls, etc. with prices.

CHICAGO.

YARD RATES.

Table listing lumber products like First and second char, 1 @ 1 1/2 in., etc. with prices.

BUFFALO.

Table listing lumber products like We quote cargo lots: Uppers, Common, Culls, etc. with prices.

We quote wholesale prices of hardwood lumber, delivered on cars or boat:

Table listing hardwood lumber products like Walnut 1/2 inch clear, 1 inch, etc. with prices.

CLEVELAND.

ROUGH LUMBER.

Table listing rough lumber products like Uppers, thick, inch, Box, thick, inch, etc. with prices.

DRESSED LUMBER.

Table listing dressed lumber products like Flooring and drop siding clear, box, select com., etc. with prices.

OSWEGO, N. Y.

Table listing lumber products like Three uppers, Pickings, Pine, common, etc. with prices.

ALBANY.

FREIGHTS.

Table listing freight rates for various destinations like To New York, To Bridgeport, To New Haven, etc.

Quotations at the yards are as follows:

Table listing lumber products like Pine, clear, 8 M., Pine, fourths, Pine, select, etc. with prices.

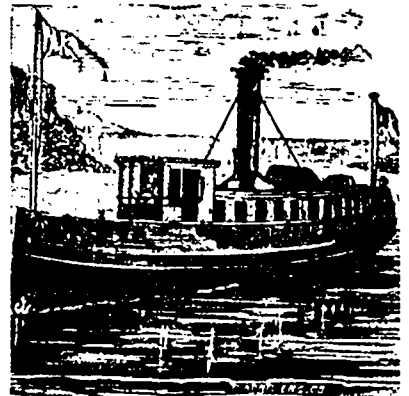
DETROIT.

Table listing lumber products like Yard rates, continue as follows: Uppers, all thicknesses, Selects, etc. with prices.

DEID & CO., WHOLESALE LUMBER DEALERS. Lumber, lath, shingles, &c. for sale to suit customers.

Advertisement for Intercolonial Coal Mining Co., DRUMMOND COLLIERY, Montreal. Includes a circular logo with a steam locomotive.

JOHN DOTY, Esplanade Street, Toronto.



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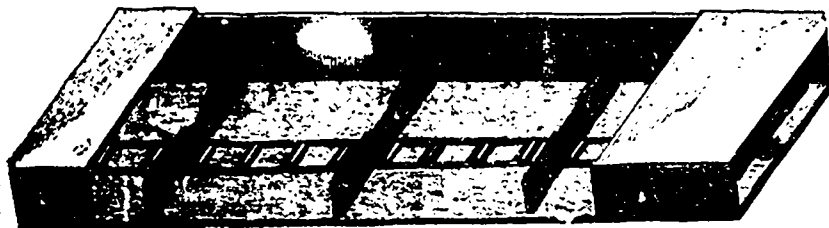
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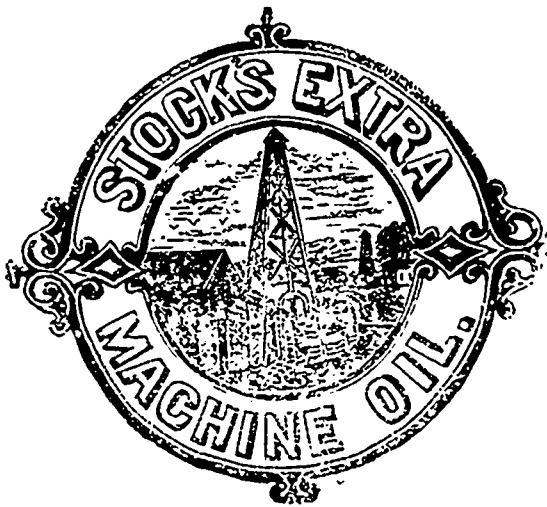
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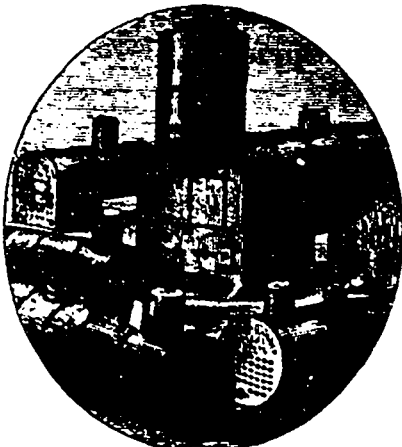
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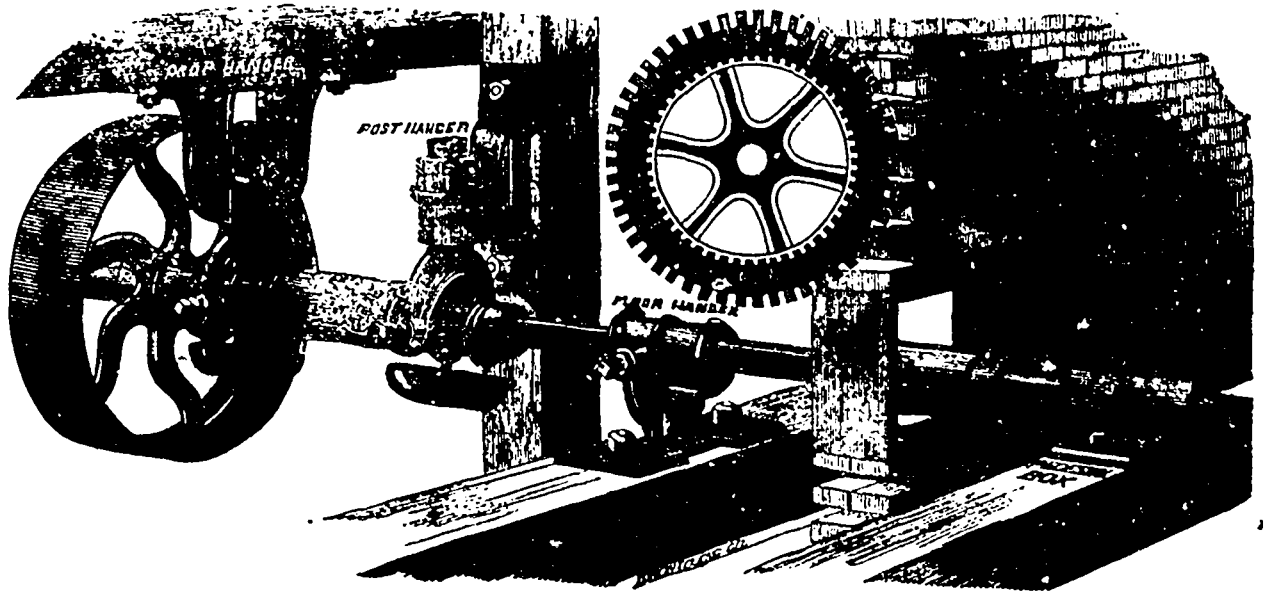
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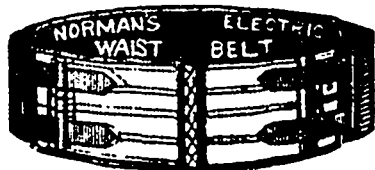
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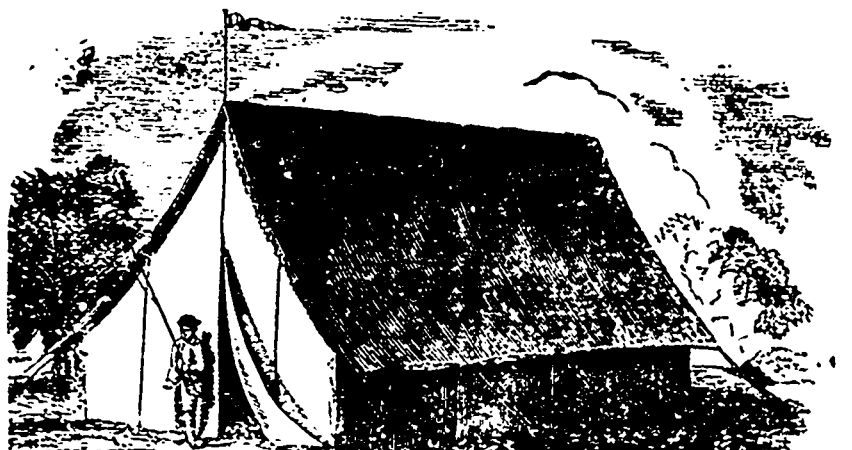
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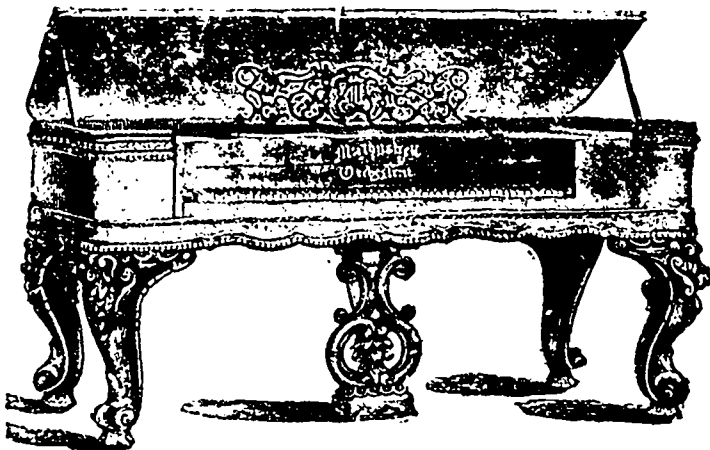
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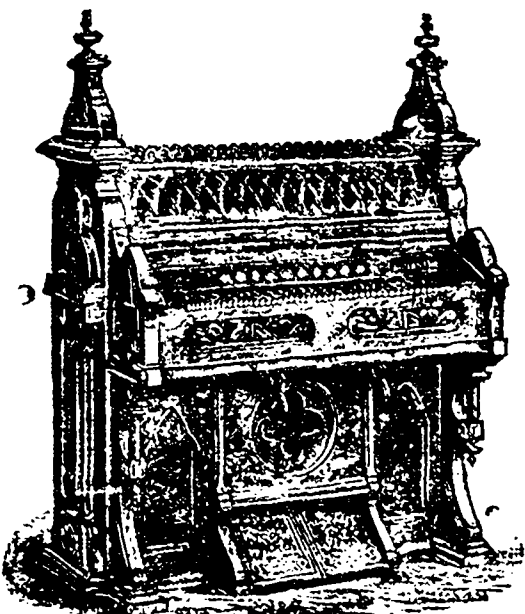
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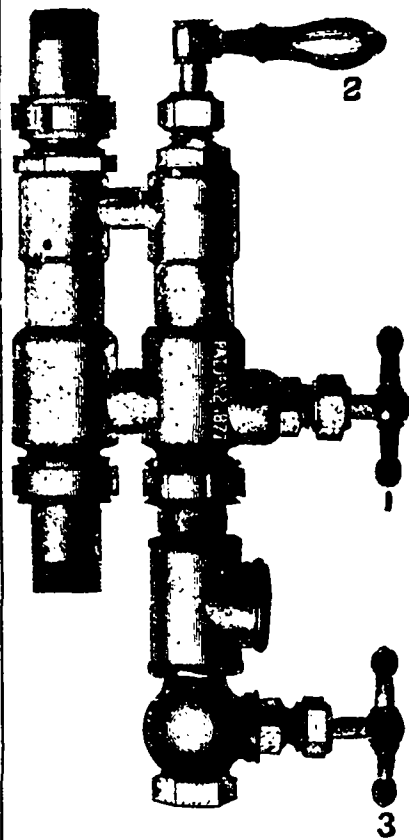
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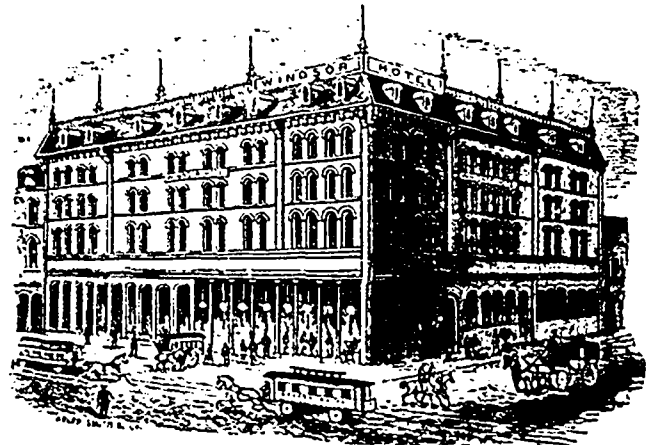
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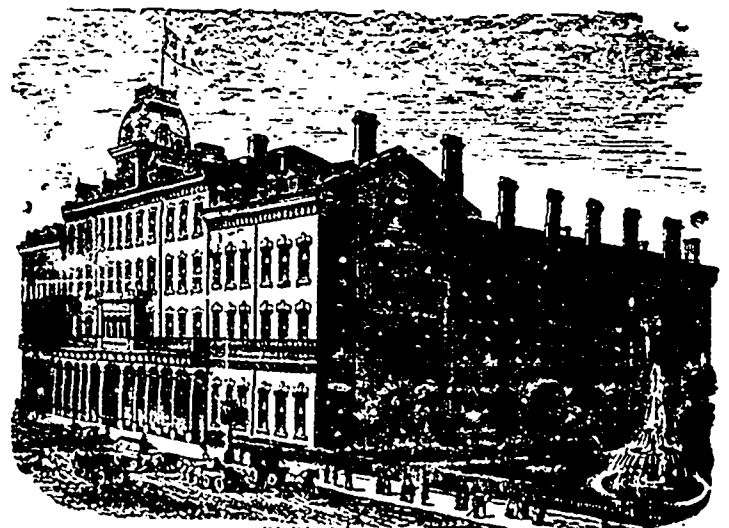
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