LUMBER WASTES.

The following letter appears in the *Timber Trades Journal* :—

Having noticed several articles in the *Journal* calling the attention of millowners to the value of lumber wastes if properly manipulated, I think it possible that a statement of the results obtained after several years of labor in this direction may not be out of place. As has been heretofore stated, wood, whether in the form of logs, slabs, or sawdust, contains 75 per cent. of its weight of volatile matter, the remainder being carbon. If this be subjected to destructive distillation in closed vessels and the gases and vapors conducted through suitable pipes and cooled, the liquids condensed are found to be equal in weight to about 40 per cent of the wood and to be composed of a mixture of pyroligneous acid, tar and water, about 25 per cent being left in the retort in the form of charcoal, the balance of 35 per cent passing off as uncondensable gas. The composition of this gas, which is inflammable, will be hereafter noted. Before proceeding farther, I beg to differ with some of the writers in the *Journal* in regard to the salability of pyroligneous acid and the various products derived therefrom. On the contrary, my experience is that there is very little demand for the various acetates derived from pyroligneous acid. But if these volatile products be decomposed and converted into a fixed gas and mixed with the gas necessarily produced, we have a product composing 75 per cent of wood which supplies a constant want in every location, namely, light. In order to produce illuminating gas, wood in the form of sawdust is found to be better adapted than almost any other material, for reasons which will become obvious as we proceed. That wood can be used to produce illuminating gas will be seen by the following, taken from Ure's "Dictionary of Arts and Manufactures": "If pieces of wood be placed in a glass retort half filled with boiling quicksilver at a temperature of 600° F. (at which quicksilver boils), a black lustrous charcoal is left and the gas evolved is composed of :—.

Carbonic acid	50.4	per cent.
Carbonic oxide.....	33.6	"
Light carbureted hydrogen....	7.0	"
	100.0	

If, however, the vapors and gases produced as above be heated to a considerable higher temperature, the volume of permanent gas is considerably augmented, while such an amount of hydrocarbons is produced as to render the gas actually richer in these constituents than coal gas. The illuminating value of the hydrocarbons was found to be one half greater than an equal volume of olefiant gas. These observations prove that wood gas is indubitably entitled to rank among illuminating agents. The following analysis shows the composition of wood gas made on a manufacturing scale; No. 1 being sample before purification at the works of the Munich Railway, No. 2, after purification at the town of Bayreuth :—

No 1

Hydrocarbons .	6.91 %	equal to 9 74 % olefiant gas.			
Light carbureted hydrogen	11.06	do	do	do	do
Hydrogen ..	15.07	do	do	do	do
Carbonic oxide.....	40.69	do	do	do	do
Carbonic acid.....	25.72	do	do	do	do
Nitrogen.....					
	99 35	do	do	do	do

No. 2

Hydrocarbons	7 70 %	equal to 11.93 % olefiant gas.			
Light carbureted hydrogen....	9.45	do	do	do	do
Hydrogen.....	18.43	do	do	do	do
Carbonic oxide	61.79	do	do	do	do
Carbonic acid.....	2.21	do	do	do	do
Nitrogen	42	do	do	do	do
	100 00	do	do	do	do

"The gas is entirely free from all sulphur and ammonia compounds, and possesses, according to Liebig and Steinheil, an illuminating power greater than coal gas in proportion of 6 to 5."

While it is not new to produce illuminating gas from wood, the writer has been able to learn of but one other instance where advantage is taken of the finely divided state in which wood exists in the form of sawdust for manufacturing gas, and this seems to be of very recent date. Without discussing merits and demerits of this process, we will proceed with a description of the apparatus and process which has been found to produce the maximum results at a minimum cost. The sawdust being fed into a hopper falls into a horizontal pipe provided with a piston working with an intermittent motion, which feeds the sawdust into a pan or retort set in a furnace. Into the interior of this retort are fitted rakes and scrapers attached to a shaft in the centre. As the sawdust is fed through the horizontal pipe, which is crowded full to prevent the escape of gas, it falls into the retort and is spread and stirred upon the red hot bottom in a very thin layer by the rakes, which instantly drives off all the volatile gases, and in the meantime the resultant charcoal is carried around to an opening in the bottom where it drops into a suitable cooling chamber. Simultaneous with this operation more sawdust is being fed and spread upon the bottom as before. The gases and vapors are taken off through ascension pipes and conducted through the superheating chamber, where any condensable vapors are converted into incondensable gas. At this point a small amount of hydrocarbon vapor is injected, the whole being thoroughly mixed and converted into a fixed gas of high illuminating power. Oil at the rate of 2½ gallons per 1,000 cubic feet of wood gas was used and a sample of the commercial gas tested by Mr. G. A. Hyde, engineer of the Cleveland Gas Light and Coke Company, and pronounced to have an illuminating power equal to 24 candles. The average illuminating power of the gas produced by his company being about 18 candles. One machine will produce over 117,000 cubic feet of gas and 3,800 lbs. of charcoal from 19,176 lbs. of sawdust in 24 hours. To produce this amount of coal gas would require 45 ordinary coal-gas retorts using 27,000 lbs. of coal. Aside from the cheapness with which gas can be produced as compared with coal-gas, there are many other advantages which will not admit of discussion at this time.

The charcoal can be used in the manufacture of gunpowder and for many other purposes. The feeding and removing charcoal being accomplished automatically, the only labor required is that of firing, which can be accomplished by one man.

IS THERE THE DAWN OF A BETTER DAY FOR TRADE BEFORE US?

There is no better indication of an approaching improvement in the timber trade than an abatement of the scale of importation, and our reports from the provinces almost all notice that there is a palpable lessening in the quantities coming forward, and the Board of trade returns for July are expected in many quarters to show a reduction in comparison with July last year. Our Stockholm correspondent told us last week that "several of the sailing ships usually employed in the carrying of wood goods from the Bothnian Gulf are preparing to lay up the approaching autumn, premiums for insurance giving their owners no hope whatever of making ends meet in the present state of the freight market;" and from Quebec we learn that vessels are laying up there rather than make another voyage at the freights now ruling. This we consider doubtful at a loading port. Also at Greenock they say that comparatively few vessels will leave the Clyde for the fall voyage, on account of the low rate of freight, and that several of their spring cargoes are already laid up. Though bad for present trade these reports are likely to stimulate it for the future. Less is doing, but more is likely to be done. Last week the import in Hull appeared to be abating. West Hartpool announced "only a light importation" for the week, and our advices from the Tyne stated that the arrivals of the last seven days had been only "small and unimportant." Glasgow also participated in the subsidence of importation for the week preceding, only four cargoes, exclusive of small affairs, being mentioned with timber goods, but the market does not appear to have been much firmer on that account, as 2nd and 3rd Miramichi wide pine planks offered by Messrs. Hunter, Sheriff & Co., on the 30th ult., went no higher than 12½d. per foot cube, equal to £8 12s. per Petersburg standard, and other good sizes went below £8. If the slackness of importation should continue through the month of August, it could not fail of being a favourable omen for the rest of the season. But these lulls are sometimes delusive, and at Cardiff they seem to anticipate more arrivals than the trade of that district and its ramifications eastward can tell what to do with. Cardiff has been competing with Gloucester for the timber trade of the Midland counties, but now it finds itself at a disadvantage by the lowering of the railway tolls on the east coast to the great manufacturing districts, and thus delivering east country goods cheaper than the west can contend with, and cargoes intended to go that way will now be superfluous in the Bristol Channel ports. Liverpool prices do not improve, and though pitch pine is still a good marketable article there, spruce is struggling against difficulties and can not be imported to leave a margin to the consignee. The best price obtainable at the public sale last week for St. John regulars, say 12 to 30 ft. long, 3x11, was £6 15s., and a cargoe from Shediac only reached an average of £6 12s per standard, mostly good lengths and sizes, than which we had nothing lower to chronicle in that market since 1879, five years ago. Last week we made some observations on the comparatively good prices which Norway finds fault with, wanting five or six pounds free on board for such goods as compete with American spruce in our markets.—*Timber Trades Journal.*

THE LUMBER TRADE IN ENGLAND.

Messrs. James Smith & Co.'s wood circular, dated Liverpool, Aug. 1, says:—The wood trade continues in the same restricted state, and values show no improvement, in consequence of the large import, and until a falling off in the supply is forthcoming confidence will not return. The demand has been stimulated more or less by the low prices, so that the tables show a large quantity has gone away, but not in proportion to the import, and the present stocks are ample for an ordinary demand. Local building operations are on an improved scale, but the general demand from the manufacturing districts keeps dull. Tonnage is plentiful and rates continue low. Money has seldom been so cheap, which is accounted for by the low level prices at which commodities are ruling, as well as restricted trade. The bank rate still continues at 2 per cent., there being little or no speculation in trade, a condition of affairs that should soon work its own cure.

COLONIAL WOODS.—Yellow pine: The import has been in excess of previous years, the demand has been fairly maintained, but stocks are heavy. The late sales have been of Quebec prime square at 2s. 6d. to 2s. 4d. per foot, and waney at 2s. 4d. to 2s. 6d. per foot. A cargo of very inferior Bay of Islands pine realized at auction an average of 8½d. per foot. Red Pine: No sales. Oak: A large parcel of mixed Quebec oak has been sold at about 2s. 8d. per foot, and prime at about 2s. 10d. per foot. Ash has been sold at 2s. per foot. Elm: No sales. Birch: A parcel of Quebec was offered at auction and withdrawn; 350 logs, ex-Hilda, from Picton, realized 17d. to 22½d. per foot for 17 inch deep; remainder withdrawn. 286 logs, ex-Aspotogon, from St. John, averaged 16½d. per foot; 63 logs, ex-Flekkofjord, from Bay of Islands, at 16½d. per foot; 200 logs, ex-Sif, from Miramichi, at 13d. to 14d. per foot; and by private, a parcel of Dalhousie at 16d. per foot. Birch planks at from 10d. to 13½d. per foot. Walnut: No sales. N. B. and N. S. Spruce Deals: The import, 19,000 standards, is too large, and prices have ruled by private; St. John at £6 per standard; Musquash at £5 15s.; Pugwash at £5 5s.; St. Margaret's Bay and Sheet Harbour at £5 15s.; Parrsboro at £5 15s. 3d.; Shediac at £5 12s. 6d.; Bay Verte at £5 7s. 6d. By auction, St. John, ex Aspotogon at £6; ex New City at £6, and Shediac at £5 12s. @ £5 13s.; Grand Pabos, 2 and 3 inch, at £5 7s. per standard. Boards and scantling at the usual reduction Quebec pine deals - 1st quality, dry floated, 2 inch, at £17; 3nd quality, 3 inch, at £15 5s. @ £15 10s.; 3rd quality at £8 5s. @ £8 12s. 6d., the 4th quality at £7 @ £7 5s. per standard. Lower Port pine deals—By auction, 4th quality from Grand Pabos, have been sold at from £6 2s. 6d. @ £8 2s. 6d. per standard, averaging £6 15s. per standard. Red pine deals in the early part of the month were sold at £8, and latterly at £7 10s. per standard. Quebec staves have been sold at £66 @ £70 per standard mille, and W. O. W. I. at £16 10s @ £18 per mille. Pailings and laths—The former realized 75s. for inch thick, and laths at 16s. 6d. per mille.

THE SHUTTING DOWN POLICY.

The question that has been so rife in the great timber centres of the United States lately of shutting down the mills is evidently the outcome of an over supply, and a consequent lowering of everything connected with the lumber trade—logging, hauling, sawing, &c.—besides the price of the wood itself, which is declining to a very serious extent. We do not hear now as we used to of the best grades of Canadian pine being wanted for the American markets, and though as yet the price of choice wood still keeps its tone at the shipping ports, we hardly see how it can be maintained in the teeth of the surplusage of similar wood on the United States side. If first kinds are scarce yet while those of inferior class are so overdone, unless the margin is greatly narrowed, consumers will learn to do without the higher priced goods till these latter eventually find their level in the market.

As yet there has been no actual closing of the mills in the wood sawing districts, but there is plenty of "big" talk going on, which we suppose will lead to something in the way proposed to curtail the production. Though the scheme has not met with the approval of the bulk of the American millowners, especially those who have orders in hand, that some plan of the kind will be adopted we fully expect, as the Americans do not believe in low prices; any reduction of wages particularly they will not admit without resorting to all kinds of devices to keep them up. It was not with the operatives here, those more especially who fondly imagined that they had become a necessity of the times, such as miners, operatives, &c., and puffed themselves up with the belief that the country could not dispense with their labor for a day without the whole machinery of commerce being thrown out of gear. But these men have long since learnt, by bitter experience, to bow to the inevitable laws of supply and demand, and have found that labor is, after all said and done, only a commodity that has to take its chance of the market, be it cheap or dear, as the case may be, just the same as anything else that is bought and paid for

In this over-production now experienced by the United States we see the connecting link that binds the products of that immense territory with the markets here, and our inability to any longer bear the strain of the immense supplies that have been continuously pouring in for years has at length begun to be felt across the Atlantic. The imports from the States are of this unsatisfactory character, that they must all be paid for in hard cash, there being next to nothing taken in goods by way of exchange to preserve that balance between two great manufacturing empires, without which no healthy trade can long exist. We both make the same articles, and it is only with regard to timber and grain that we really have anything from America that we have not already in abundance, and these latter even we could spare without much hardship.

Coal and iron were at one time the exchange commodities upon which we depended to keep the balance square, but now these are hardly wanted by those countries we used to furnish so abundantly, and America in particular. So that the bulk of the imports from the States having, as stated, to be paid for in bullion, when an over-stock comes, beyond what this market can sustain, prices go down; and not only does our commerce receive a check, but we now see the American markets are also being overborne. This was not felt in the States for a long time, the vast grain resources of that country coming to the rescue; but with the markets for the latter also failing the first symptoms of a great collapse of trade are now apparent. How long it will be coming it is impossible even to hazard a conjecture, but many changes will doubtless be made that will stave off the evil day for a considerable time yet to come.—*Timber Trade Journal (Eng.)*