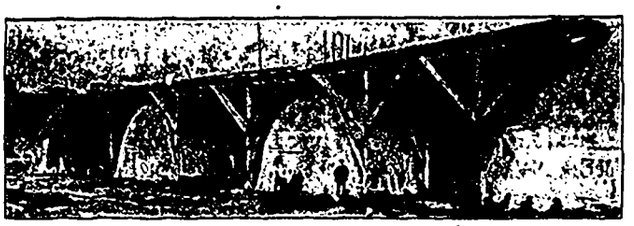
the heat and light, is productive at times of sun-stroke, and the glare is frequently painful to the eyes. This is most noticeable in closely built business sections where there is least circulation of air, where the sun beats down between high brick walls; and is not so objectionable on a shady residential street with houses well apart. Vitrified brick and stone block pavements are neither so dusty nor hot as asphalt since the surfaces are less smooth and assist in retaining in the joints the finer particles of dust. Sprinkling, too, is in a greater measure effective in subduing dust on brick or stone block than on asphalt, from the hot, smooth surface of which moisture evaporates rapidly. A macadam pavement is dusty if not properly treated, but it scraped and swept as are other pavements, the dust can be largely subdued by sprinkling. Noisiness, if excessive, is another unsanitary feature. A noisy pavement is jarring to the nerves, grating upon the sensibilities, and for either a heavily traveled business street, or a residential quarter, a quiet pavement is much to be desired. Noise itself is not always unhealthy. It is doubtful if the workman in a boiler factory, or a railroad engineer or other employee, is much influenced by the noise incidental to his occupation. Both are muscular of body, constantly taking vigorous exercise. But to the more sedentary man of business, whether at high nervous tension in his office or resting in the quiet of his home, a din, constant or intermittent, is a source of annoyance, and as such, is wearing on the nervous system. The most objectionable in this regard is granite or other stone block pavement. Vitrified brick is apt, unless great precautions are taken, to create a disagreeable rumbling. Asphalt, wood and macadam are the least objectionable with respect to noise.

While we have this to say of the comparative healthfulness of different varieties of pavements, there is another condition of matters common to too many towns and cities, in which the streets in fall and spring form a wilderness of mud and stagnant pools, and in summer are shapeless beds of dust. Many of them are made the receptacles of the refuse from private property, which is left to disfigure the street, forming rivers of filth and cess-pools of disease. Such streets have been regarded as a zero quantity, doing no particular harm, doing no particular good. Streets, however, which do no good, should do good, and therein lies the harm. A good street is a well-drained street, a well-cleaned street, and is a source of healthfulness to the members of the community. Streets should be the public parks, pleasing to the cultivated taste, adding to the culture and refinement of the people, and enticing them to breath health and vigor, whether walking, bicycling, riding or driving. Passing along the city street we reach the country highway, which, as a means of permitting the people of the city to leave the congested portions and to reside in the less thickly populated suburbs, forms an important factor in securing public health.

WOOD CARBONIZATION.

In the destructive distillation of wood, that is, ordinary charcoal burning, there are in the smoke or gas several valuable substances. These substances have been known for a long time and some have been partially recovered. The first process employed for the purpose was that for the production of tar from pine wood. Later, on the continent of Europe and in Scotland, wood was burned in retorts and the pyroligneous (that is crude acetic acid), was made into acetate of lime. Of late years, however, this business has had a very great development in the United States, where the large amount of excellent hard wood forests in the natural gas regions, where no wood is used for fuel, has given a very cheap raw material, making possible the export of acetate of lime and wood alcohol to Europe with profit.



THE CHARCOAL KILNS AT DESERONTO, ONT.

At present, there are two distinct processes used, called the kiln process and the retort process. In the kiln process the cord-wood is put into a large brick or stone "beehive" kiln and burned in the ordinary manner for producing charcoal, but the smoke or gases do not escape into the air, but are drawn through a chimney into a series of condensers, where all the liquid products are condensed out, and the gas is burned under the boilers. The liquor condensed (amounting to 180 gals. for a cord of well-seasoned dry wood), is led into tanks and the tar is separated out. This tar is redistilled, producing oils and pitch. If only wood alcohol is to be made, the settled liquor is distilled and crude alcohol produced and the residual pyroligneous acid is run to waste. If brown acetate of lime is to be made, the crude liquor is neutralized with lime before the alcohol is distilled off. If gray acetate of lime is to be produced, the crude liquor is all distilled and purified before neutralizing with lime. This method gives the best product, the gray acetate of lime containing from 82 per cent. to 86 per cent. of acetic acid, while the brown acetate of lime sometimes contains less than 60 per cent. of acid. The retort process differs from the kiln process of carbonizing in having the cord-wood put into horizontal wrought-iron cylinders, and these are heated by a fire-place beneath them. In the kiln process, enough air is let into the kiln to burn a portion of the wood, and this heat serves to carbonize the rest. The retort process is superior to the kiln process in giving larger yields of valuable products, but the cost of installation and of working is greater.

The by-products in the liquors from the condensers are recovered the same way, whether produced by the kiln or retort process. In all the processes the alcohol is re-distilled, purified and treated chemically, and brought up to a strength of 95 per cent., before being put on the market. The products of this industry are used in the arts for various purposes. Wood alcohol or methyl alcohol is like grain alcohol in many physical properties, but is poisonous. It is used for making spirit varnishes for burning and dissolving various gums, and by the government for making methylated spirit. Acetate of lime is used for the production of acetic acid, which is the acid of vinegar, and is diluted and flavored and sold for this purpose in Russia and other European countries.

The Standard Chemical Co., Limited, first introduced the retort system into Canada about a year and a half ago at Fenelon Falls, Ont. Previous to this, the only works in Canada turning out these wood products, were located at Deseronto, and owned by The Rathbun Co., which owned the patents for the Burrel