

Imposition practised by the Employees of the London Gas Companies.

In the City of London they have endeavoured to increase the illuminating power of the gas by what is called the "carburation process," that is, by passing the gas over naphtha contained in a vessel placed just under the burner. The value of this process is unquestionable, since it has been shown that ordinary gas, giving the light of twelve candles, may, by taking up from four to seven grains of the naphtha vapour per cubic foot, have its illuminating power increased twenty-five or thirty per cent. But the process applied to the City lamps has not given the satisfactory results which were expected. There have been several reasons for this. The vessels containing the naphtha are too large, and obstruct much of the light; the burners have, in many instances, been placed so high in the lamp, that the flame is on a level with the wide iron frame which also cuts off a good deal of light. There are still other reasons why the results have not been so successful as was expected. The gas companies, as a matter of course, did all they could to prevent the success; and the carburation company did not do all they could to ensure it. Dr. Letheby examined eighteen samples of the liquids from the carburators with the following results:—

"1. That in one sixth of the cases *there was no naphtha whatever*, but merely water, in the carburator; and

"2. That in no instance was the naphtha of the quality necessary to give the desired increase of illuminating power to the gas." The Doctor had "already ascertained that the naphtha should give, at least, 6.5 grains of volatile hydrocarbon to each cubic foot of gas to raise the illuminating power to the required standard of 30 per cent. above the ordinary quality." The City authorities are now about to take the matter into their own hands. They intend to place a meter at each street lamp, and supply the carburators themselves; and there cannot be a doubt that, if proper vigilance be exercised, the results will be a considerable saving to the rate-payers in the cost of gas, and a great increase in the illumination of the streets. But it will require great vigilance to prevent the gas companies from playing tricks such as are more than hinted at in this Report.—*Chemical News.*

London Sewage.

A correspondent states that the salts contained in the "bulky fluid" may be solidified by means of plaster of Paris, or a mixture of the same with peat ashes, which contain gypsum. Made into cakes, they would keep a long time without smell; and, when used, should be coarsely powdered, the nitric acid of rain-water being all sufficiently powerful to dissolve any solid manure. London sewage, with its admixture of offal, &c., requires further admixture with a milder substance, like gypsum, which is not only an excellent stimulant to roots and plants to which it adheres, but is a powerful deodorizer. Night soil imparts a biting and acrimonious taste to radishes and turnips. Cabbage are less sapid and delicate. Potatoes borrow its foul taint. It has been traced to the onion. Millers perceive a strong and disagreeable odour in the meal of their wheat grown on it. It imparts a disagreeable flavour to asparagus and tobacco. It seems as if some por-

tion of the foul matter of the night soil is absorbed by the vegetable *radicles*, and, after passing unassimilated through the sap vessels, is converted by the process of nutrition, to living substances. Ducks owe their offensive taste, at table, to it.—*Mechanics Magazine.*

A New Substance as Food.

All the gums are highly nutritious. A little, frequently dissolved gradually in the mouth, allays thirst and hunger. Soldiers, shut up in a fortress could be kept alive many weeks with no other sustenance than gam-arabic, or cherry-tree gum. It is a powerful remedy in dropsy, from its affinity for water. In epidemic seasons, and as a preventive against ague, it may be used as an antiseptic, as it defends, or sheathes, the coat of the stomach against malaria. It braces up the nerves and lax-fibres of the corpulent, and reduces obesity. Dissolved in beef tea cases of debility are soon conquered.

Photography on a large Scale.

Mr. England states that, in producing stereoscopic and card pictures of the interior of the International Exhibition, he has used the following quantities of material:—

Albumen	200 gallons
Paper	70 reams
Nitrate of Silver	2400 grains
Pure metallic gold 35 oz., making of—	
Terchloride of gold about	25,000 grains
Hyposulphite of soda, 25 cwt., or	1 1/4 ton.

The number of stereoscopic pictures produced during the summer has been upwards of two thousand gross, or considerable more than a quarter of a million slides. The card portraits from the same negatives amount to very many thousand.

Voltaic Batteries for Steamers.

The Emperor of the French is now superintending the construction of one of these batteries, intended to replace fuel. In England, it has been proposed to the Admiralty to make a trial of a voltaic battery of 2,000 double plates, each containing 30 square inches, the whole surface being 128,000 square inches. Charcoal points, connected with the two poles, are ignited to whiteness; on withdrawing the points from each other, an arch of light, 4 inches in length, is produced between them. When any substance is introduced into this arch, it instantly ignites. Platinum melts as readily as wax in a common candle. Quartz, the sapphire, &c., with equal facility.

Momentum.

The experiments at Shoeburyness with shot against iron targets have developed some curious results. The appearance of a conical iron shot after having struck the iron target is like that of a birch broom hollowed in the centre. When the point of the cone strikes the target it is stopped, but the surrounding portions of the shot move forward and slide over the centre as a cone, and thus produce the form described.