Varieties.

PETROLEUM FOR BURNING BRICK.—A burner is in use, in Canada, by which residuum or crude petroleum is used instead of coal or wood in brick kilns. By a simple contrivance the nozzle of the burner is made to throw the flame directly downward at the first firing, and after burning the head (as it is termed) this nozzle is replaced by a straight one, the change being effected in a few moments. The flame is thereby thrown into the arch any required distance, burning the whole kiln from one end, and doing it in much less time than by the old method, and with perfect success as regards the quality of the burning. One man, by this process, will be able to do as much firing as a dozen with the old, as he can attend to as many arches as may be set going in one yard, and by this means save a large item in labour. The tar or petroleum consumed will not cost as much as wood at $3.50 per cord.—*Jour. of App. Chem.*

TANNIC ACID FROM SUMAC.—Whatever doubts may have existed as to the identity of the tannic acid in Sicilian sumac and that in gall nuts have been removed by the experiments of Julius Lowe. His experiments prove that tannin can be profitably prepared from the Sicilian sumac, which contains as much, if not more, of this material than gall nuts. To ascertain how much of the tanning substance is contained in sumac, which is now so much used for that purpose, the usual method of titration is employed. The tannin is extracted from the sumac by means of water, the solution filtered through flannel, and the tannin taken up with acetic ether. From this solution the ether may be distilled off and employed a number of times for the same purpose, so that the cost is not increased by the use of this solvent. Acetic ether is easier to use, and less dangerous than the more volatile and inflammable ether ordinarily employed.—*Jour. of App. Chem.*

A NEW USE FOR NITRIC OXIDE.—The most important use to which nitric oxide is now applied is the oxidation of sulphurous acid and its conversion into sulphuric acid. The ease with which it takes up oxygen from the air and gives it up again to other substances is likely to find other important uses in the arts. Kuhlmann has employed it quite successfully for converting the protoxide of manganese, formed by precipitating the chlorine residues with lime, into the binoxide, and thus rendering it capable of use for an indefinite number of times in the manufacture of chlorine. If nitric oxide mixed with a sufficient quantity of air be passed over the protoxide of manganese, the latter is converted into the nitrate of manganese. On heating the nitrate of manganese to 200° C. it is entirely decomposed, giving off nitric oxide, while binoxide of manganese remains behind.

$$Mn\,NO_3 = Mn\,O_2 + NO.$$

The nitric oxide involved in this part of the process is mixed with air, and employed to convert a fresh quantity of the protoxide into the nitrate, which is again decomposed by a temperature of 200°, so that the process is continuous, and theoretically unending. Kuhlmann is now engaged in overcoming some practical difficulties in the way of applying it on a large scale.—*Jour. of App. Chem.*