opinion that evaporation is the chief agent in nitrification.

Everywhere water is to be found evaporating, especially on the ground; nitrite of ammonia ought also to be found everywhere; and by contact with alkaline bases, alkaline nitrites are formed, which oxidise in the air, and are transformed into nitrates. †

In our rainy countries, nitrites are carried away by the water, and, consequently, do not accumulate; but it is otherwise in hot countries, and especially in certain parts of the West Indies, where the dry season is of several months' duration, and where there are to be found vast plains of alkaline earth.

The presence of nitrogenised matters is not a condition *sine qua non* of nitrification; nitrate of potash is formed in Bengal, in places where no nitrogenised matters exist capable of furnishing ammonia.

According to the author, attempts should be made to produce saltpetres artifically, aided by the data contained in this memoir.

The presence of ammoniacal salts in volcanic vapours, recently confirmed by M. Charles Deville's researches, should be ascribed, says the author, to evaporation only, for it is impossible to admit the presence of nitrogenised matters in volcanoes. Hydrochlorate of ammonia is formed by contact with hydrochloric acid and nitrite of ammonia. Disengagements of hydrochloric acid have likewise been observed by M. Deville.

The formation of nitrite of ammonia is of great importance also in vegetable chemistry. Chemists have proved that plaints cannot assimilate free nitrogen. To render assimilation possible, the nitrogen must exist in certain combinations; ammonia and nitrates are supposed to contain nitrogen in a suitable form. If such be the case, nitrite of ammonia, produced by evaporation, contains nitrogen in an assimilable state. Each plant, itself a cause of evaporation, furnishes the portion of assimilable nitrogen necessary to it, whilst the salt is formed, in like manner, in earth moistened by rain.

Saliva contains nitrite of ammonia. With addition of sulphuric acid, it colours starched iodide blue. Treated with potash, it throws off white vapours, by contact with hydrochloric vapours, and browns turmeric. These reactions, however, sometimes fail; but that may be caused by the presence in the saliva of sulphocyanide of potassium, which decolorises blue starched iodide. The colour appears only when the nitrite is in excess.

This process is inadmissible for the detection of nitrite in urine, because this liquid has also the property of decolorising blue starched iodide, as M. Pettenkofer's experiments prove.

The pituitary secretions show the reaction of the nitrites; but it varies in different persons, and is not always constant in the same individual. The presence of nitrite of ammonia in these liquids has not been previously observed.—*Verhandlungen der Naturforschenden Gessellschaft in Basel.* 1862, p. 342.

† The author has observed that the "pure" potash of the laboratory almost always contains nitrite, proceeding from the evaporation of alkaline solutions, as can be proved by dissolving it in water, and adding *pure* sulphuric acid and the starched iodised reagent. It is the same with sulphuric acid, and generally with water, distilled or not.

Statistical, &c.

THE ALKALI TRADE OF GREAT BRITAIN.

The quantity of raw material consumed, the amount of capital employed in the manufacture; the number of hands engaged, and the value of the commercial product, chiefly consisting of carbonate and caustic soda, are truly enormous; and serve to impress our non-manufacturing people with the vast importance of encouraging home productions of this kind, so great is their influence upon other branches of industry.

Statistics of the Alkali Trade of Great Britain, 1862.

Annual value of finished products ... £2,500,000
Weight of dry products ..... 280,000 tons

Raw Materials consumed per annum.

	Tons.
Salt	254,600
Coals	961,000
Limestone and Chalk	280,500
Pyrites	264,000
Nitrate of Soda	8,300
Manganese	33,000
Timber for Casks	33,000
Total	1,834,500

Capital employed in the Manufacture.

In Land	£235,000
In Plant, Buildings, &c.	950,000
Working Capital	825,000
Total Capital	£2,010,000

Annual Cost of Materials for Repairs.

Stones, bricks, slates, iron, lead, timber, &c. £135,500

Labor, not including Labor in transit.

	No. of Hands.	Souls.	Annual Amount of Wages.
			£
Directly employed	10,600	53,000	549,500
Employed in getting coals	3,100	15,500	112,840
" making salt	420	2,100	16,380
Getting & break'g limestone.	660	3,300	25,740
Getting pyrites	4,030	20,150	157,150
Felling & sawing timber for casks	330	1,656	10,140
Total labor employed in the manufacture, and in the preparation of raw materials used in it	19,140	95,700	871,750

Manufactures depending upon the Products of the Alkali Trade.

Soap.	Woollen.
Glass.	Color making.
Paper.	All chemical manufactures of any magnitude.
Cotton, all.	
Linen.	