

expected from the far distant scientific investigations of the future. Here then we find ourselves face to face with one of the many questions to which scientists must answer, We don't know yet. Perhaps the activity and functions of nitrogen may by and by be located elsewhere in the body, and it is not impossible that it may have a closer connection with the nervous system than is now generally supposed. But what we are now quite certain of is that comparatively little of the nitrogenous substances or proteids of the vegetable kingdom remain permanently in the bodies of animals. A much larger quantity, or rather of their nitrogen, is made use of in simply sustaining the vital processes. Of the albuminoids thus consumed, say by the live stock on a farm, their carbon finds its way to the lungs in the shape of carbonic acid and their nitrogen is expelled chiefly in the liquid manure of the animals. This is a fact not yet sufficiently appreciated by our agriculturists generally, and much of the nitrogen thus expelled finds its way back to the atmosphere. When it is properly cared for by the farmer it does, or should, not escape from the soil of his fields. Our nitrogen thus travels back to soil or atmosphere after having completed its life giving circulation through the vegetable and animal kingdom. If it is allowed to reach the atmosphere then the agent, of the leguminosæ is required to recapture it. If it again becomes a part of mother earth it is pretty securely held and is subject to some changes which we have now to consider.

Animal matter containing nitrogen, when it finds itself in a soil which is destitute of bases such as potash, soda or lime, usually gives rise to the formation of ammonia, but when bases are also present further oxidation takes place to nitric acid with simultaneous formation of nitrates such as saltpetre. It was this fact which caused Chaptal to suggest nitrogen as a name for that element from words signifying "I give rise to nitre."

(Here the following experiments were introduced and explanations given ; combustion of phosphorus and carbon in nitrous oxide ; oxidation of nitric oxide to nitrogen tetroxide ; production of nitric acid from saltpetre. The lecturer also referred to the oxidation of nitrogen in the soil, and the manufacture of nitre in the the East Indies.)

The instability of the compounds of nitrogen has been referred to,