gard to their importance as nutriments; it only demands the acknowledgment of their equal significance as matters indispensable to vegetable life; and as the mineral constituents can only be supplied by the soil itself, whilst the sources for ammonia are various; it recommends such a system of manuring as is in best accordance with these facts. If we apply ammonia to the one of the soils above referred to, and soluble mineral salts to the other, we restore an equilibrium of the nourishing substances in both soils, and by so doing render them productive in the very spirit of the mineral theory. But we also know that the same result can be effected by putting both soils in the fallow until the one has appropriated to itself the required quantity of ammonia from the atmosphere, the other that of soluble mineral salts, as produced by the steadily advancing degradation of its mineral constituents. A soil which has become deficient in ammonia may, therefore, once regain its fertility without any artificial application being made to it; as can also a soil which is deficient in soluble mineral salts, but contains such constituents as will produce them by their degradation; whilst a soil which has no mineral constituents whatever, will remain unproductive until it is artificially supplied with them by nature.

In practice, where we cannot wait until the soil has recovered its nourishing ingredients by its own exertions, we have to apply both ammoniacal and mineral manures to restore its fertility; and if we choose to apply only the latter, with the expectation that the ammonia required would be furnished by the atmosphere, we would be acting just in the same way as if we had added ammoniacal salts alone to a soil deficient in soluble mineral salts, with the expectation that they would be furnished in time by the process of degradation. In neither case will our expectations be realized in practice, nor are they in compliance with the spirit of the mineral theory.

Lawes' and Gilbert's observations illustrate most remarkably the importance of ammonia as a nutriment for plants. They found that the more of nitrogen we apply to a soil by manure, the less is its quantity in the grains of the wheat crop raised upon it; and as the absolute quantity of nitrogen of the whole crop, in toto, is augmented in proportion to that of the soil, it naturally follows that these extra additions made, increased to such an extent the weight and number of the grains, as to effect even a decrease in their *per centage*, or *relative* quantity of nitrogen. Besides, we know by the statements of these agriculturists, that the market price of