

PLANT FOOD AND ITS SOURCES.

To understand and appreciate the full significance of my subject, the improvement and recuperation of soils by the growth of legumes, it will be necessary for us to first consider the sources of plant food, the nature of soils, and the manner in which soils are affected by cultivation.

The analysis of plants shows that they are composed of some thirteen chemical elements, present, as might be expected, in varying proportions, according to the nature of the plant and the part of it examined. Though these are built up by the plant into numerous combinations, we can readily recognize in all vegetable structure three distinct classes of compounds, viz.: water, mineral or ash compounds, and organic compounds. The elements comprising these are drawn from two sources, the atmosphere and the soil, both of which, as we shall see, furnish this food in forms or compounds suitable to plant life, for it is well to remember that the uncombined elements are practically valueless, considered as plant foods for farm crops.

The following scheme permits one to see at a glance the constituents of plant food, their sources and products :

PLANT CONSTITUENTS.

		2 Soils			
THE ORGANIC ELEMENTS	{ Carbon Oxygen Hydrogen }	Carbonic Acid	{ Starch Sugar Fibre Oil }	Albuminoids	{ AIR DERIVED ELEMENTS }
		Water			
		NITROGEN			
	THE INORGANIC ELEMENTS	{ Calcium Magnesium POTASSIUM Sodium Iron Manganese }	PHOSPHORUS		
Silicon					
Sulphur					
Chlorine					