It is only by facts of this kind, well established and indisputable facts, that principles in agriculture or in any art or science can be demonstrated. The creations of fancy however beautiful cannot now satisfy the human mind in its yearnings for truth. It seeks for and is only contented with what is proven by exact demonstration. Now no mere hypothesis however brilliant, can be received with blind confidence. No theory now, however fascinating, can be tolerated, that is not founded on legitimate deductions from indubitable facts. Experimental inquiry and scientific investigations must be appealed to, to satisfy all doubts; for the human mind is not satisfied with explanations of that which it does not understand by assumptions more incomprehensible than that which is sought to be explained.

A soil may contain any or even all save *one* of the constituents of a *good* soil, in the large proportion indicated below and yet be unproductive.

Lime,	1.65	*1.80		*6.25		
Humus,	3.98	*4.10		*3.60	*3.88	
Magnesia,	.16	.28	.73	.80	*1.25	
Potash,	.05	.15	.30	*1.20		
Soda,	*.10	*.30		*.85	*1.65	*2.13
Phosphoric acid,	.19	.198		.36	.40	.20
Animal and vegetable or Organic matter,	*10.12	*25.00		*32.16	*52.17	
Chlorine,	.06	.08		*.11	*6.21	*.42
Sulphuric acid,	.051	*.082		*.253	*.267	
Alumina or pure Clay,	5.25	7.97		*13.21	*18.50	
Silica or Sand,	*92.	*95.61		*97.84	*98.00	
Iron as per Oxide,	*8.14	*10.30		*17.75	*29.00	

All these soils were unproductive so that it is proven by the above facts, that a soil may contain five hundred and forty, or even eighteen hundred and seventy-five bushels of lime, distributed to the depth of twelve inches, that it may contain three hundred and seventy-five bushels of magnesia, that it may contain sixty bushels of phosphoric acid, equal to about two hundred and forty bushels of bone dust, or that it may contain three hundred and sixty bushels of potash and yet be barren, sterile and unproductive and not repay the cost of cultivation. The same is equally true of any number, save all of the constituents of a good soil.

On the other hand it is proven that soils very productive particularly for wheat, may contain the small proportions of any one

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Those marked thus* are soils of our own State.

N. B. .1 or .10 is the one tenth of one per cent., and is equal to about thirty bushels to the acre of the substance it represents, the specimen being taken to the depth of twelve inches. It is equal to the one-thousandth part of the specimen.