

tance powerfully aids by direct action, by its powers of absorbing and retaining moisture, and by its chemical action in encouraging changes of structure in substances. It is itself, too, in the state of a carbonate, partially soluble in water containing carbonic acid, as rain water, and is thus rendered capable of entering into various combinations, and prepared for absorption by living vegetables. This substance is also believed to act directly upon vegetables as a stimulant, both to their powers of absorption and digestion ; and all soils are improved by its judicious application,—the poor, if properly applied, equally at least with the rich. In wheat soils its presence is peculiarly desirable ; as several soils have been rendered capable of bearing wheat after its application, which could not carry this crop before.—This may be easily understood, from a consideration of its active properties, which are absent in alumina. The soluble salts also assist in the process of chemical conversion, and they themselves, the products of decomposition and recomposition, have also, it is believed, a stimulating effect, as well as the earths, as components in the physical structure of plants. The alkalis too have a direct chemical action upon the salts of lime and constantly tend to restore that substance to purity, by which operation it may become again possessed of the power of reducing the insoluble vegetable matter in soils, and thus once more contribute to perductiveness.

J. A.

(To be continued.)

ATMOSPHERIC INFLUENCES ON SOIL AND VEGETATION ;

Showing the nature of these atmospheric influences upon soil and vegetation, as affecting the amount and value of the produce, including the modification of these influences arising from heat and cold, dryness and moisture.

CONTINUED.

It has been remarked in some late seasons, in Northern latitudes, that when the summer is wet, and without a sufficiency of sun-light and heat, the young shoots of trees often die down and wither in winter. The bark being thus not sufficiently ripened and matured, the shoot, from its succulence, is easily affected by frost and destroyed.—On the other hand, powerful summer heats enable trees to endure excessive cold, as is proved in innumerable instances from many unsuccessful attempts at acclimating individuals ; and from among many others, nearly equally familiar, we may mention the very familiar instance of the weeping willow, which attains to the highest degree of perfection in England, while, in Scotland, except in very favored spots, it never succeeds ; the summer heat in England being much greater than in Scotland.

The distribution of plants over the Globe depends much on the distribution