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CHARCOAL AS A MANURE.

[We would call the attention of our Agricultural readers to the following article, copied from the Albany Cultivator. It is worth a trial, and if it succeeds, it will be an easy matter for every farmer in the County to supply himself with a sufficient quantity of Charcoal, at a very trifling expense, and but little labour, to enrich his farm.]—Ed. Gleaner.

We wish to call attention to a paper under this title in the transactions of the New York State Agricultural Society, furnished by J. H. Hepburn, Esq. of Lycoming, Pa. The facts there stated, agreeing as they do with what every one must have witnessed to a greater or less degree, should secure for charcoal as a manure, a greater degree of consideration than it has yet received. As it is probable some of our readers may not meet with the 'Transactions,' we shall condense some of his statements for the benefit of such.

'During the last autumn, business called me into Harford Co., Maryland. While there, I was surprised at the exceedingly luxuriant growth of a crop of grain, but lately seeded into a field on Deer Creek, and also at the peculiar appearance of the soil. The soil upon which the grain was growing, had a remarkably dark appearance, and appeared to be so mellow and friable as nearly to bury the foot at every step. * * * I inquired if the field had not been covered with charcoal, and was told that it had been. I inquired when it was done, and was told that it had been spread upon it more than *twenty years ago!* I then asked what was the general quality of the crops raised upon it, and was told they were invariably fine, both as to quantity and quality.' Mr. Hepburn gives, among other experiments, one made by a gentleman in the iron business. 'He had a large quantity of coal that had become too fine to be used in his furnace, and not knowing what to do with it, concluded as the easiest way to dispose of it, to haul it out, and spread it on his grass land. He spread it late in the fall, and for many years, he informed me, he observed the most astonishing effect produced upon his yield of grass. The quantity was nearly doubled, and the good effect continued as long as he owned the property, which was at least ten years.' Mr. Hepburn also states the important fact, that 'wherever charcoal has been applied, *rust never effects the growing crop of wheat.*'

Every coal burner is aware that a vigorous and healthy vegetable always surrounds the old hearths, or coal beds, as the place where the coal has been burned is called. We have known a blacksmith who made his own coal, that always used the hearth for an onion bed, and his uniform success justified the use to which he appropriated those places. In another instance a farmer who was remarkable for his gardening operations, told us that his practice was to make his garden beds for onions, carrots, &c., and then spread over them a layer of straw some ten or twelve inches in thickness, which was burnt on the ground. The charcoal and ashes made by this dressing was slightly raked in, and then the seeds sown. In this way, his crop never failed.

Mr. Hepburn remarks that he shall not attempt to explain the chemical action or affinities which impart such value to charcoal. We think the following quotation from Liebig, will exhibit one great cause of its efficiency In speaking of the power of various substances to absorb ammonia from the atmosphere, he says,—'Powdered charcoal surpasses all other substances in the power which it possesses of condensing ammonia within its pores, particularly when it has been previously heated to redness. Charcoal absorbs 90 times its volume of amonical gas, which may again be separated by simply moistening it with water' The experiments of Lucas given in the appendix to Liebig, are also most striking proofs of the value of charcoal to vegetation, and the manner in which it operates. They show that plants thrive in powdered charcoal, and may be brought to blossom and bear fruit, if exposed to the rain and the influence of the atmosphere, a result almost impossible to obtain in any other simple substance, and which can only be owing to the facility with which powdered charcoal absorbs and gives out the gases, whether carbonic or ammoniacal. It is to this facility of absorption that charcoal owes its *sweetning* properties, as its effect on partially spoiled meat.

As charcoal is almost indestructible and its effects as a manure remains as long as it exists in the soil, it is possible that charcoal may be found one of the cheapest as well as most efficient manures for some crops, and on some soils. It appears evident from the manner of its action, that plants requiring the greatest supply of nitrogen would be the most benefitted by its application, and hence its efficacy when given to wheat. It could produce little effect on extremely wet soils, as alternations of dryness, to allow the contact and condensation of the gases, and of moisture to render absorption available, are necessary to give effect to charcoal. Charcoal has a physical, as well as a chemical effect on soils, decidedly useful. It renders them as far as it is present, light and friable; and gives additional warmth to them by its colour, which absorbs and retains readily the rays of the sun during the day. It is not surprising that those preparations of night soil, in which powdered charcoal constitutes a large portion, should be found more effective and durable, than those in which its place is occupied by peat or even common mould.

From the fourth Edition of Mrs. Somerville's Work 'On the Connection of the Physical Sciences.'

Influence of Temperature on Vegetation.—Vegetation varies with the Latitude and Height above the sea.—Geographical distribution of Land Plants.—Distribution of Marine Plants:

The gradual decrease of temperature in the air and in the earth, from the equator to the poles, is clearly indicated by its influence on vegetation. In the valleys of the torrid zone where the mean annual temprature is very high, and where there is abundance of moisture, nature adorns the soil with all the luxuriance of perpetual summer. The palm, the bombax ceiba, and a variety of magnificent trees, tower to the height of 150 feet above the banana, bamboo, the aborescent fern, and numberless other prductions so interlaced by creeping and parasitical plants as often to present an impenetrable barrier. But the richness of vegetation gradually diminishes with the temperature; the splendour of the tropical forest is succeeded by the regions of the olive and vine: these again yield to the verdant meadows of more temperate climes; then follow the birch and the pine, which probably owe their existence in very high latitudes more to the warmth of the soil than that of the air. But even these enduring plants become dwarfish stunted shrubs, till a verdant carpet of mosses and lichens, enamelled with flowers, exhibits the last signs of vegetable life during the short but fervent summers at the polar regions. Such is the effect of cold on the vegetable kingdom, that the number of species growing under the line, and in the northern latitudes of 45° and 68°, are in the proportion or the number 12, 4 and 1. Notwithstanding the remarkable difference between a tropical and polar Flora, moisture seems to be almost the only requisite for vegetation, since neither heat, cold, nor even darkness destroys the fertility of nature. In salt plains and sandy deserts alone hopeless barrenness prevails. Plants grow on the borders of hot springs—they form the oases wherever moisture exists, among the burning sands of Africa—they are found in caverns void of light though generally blanched and feeble. The ocean teems with vegetation. The snow itself not only produces a red alga, discovered by Saussure in the frozen declivities of the Alps, found in abundance by the author crossing the Col de Bonhomme from Savoy to Piedmont, and by the polar navigators in the Arctic regions, but affords shelter to the productions of those inhospitable climes, against the piercing winds that sweep over fields of everlasting ice. Those interesting mariners narrate, that under this cold defence plants spring up, dissolve the snow a few inches round, and the part above being again quickly frozen into a transparent sheet of ice, admits the sun's rays, which warm and cherish the plants in this natural hot-house, till the returning summer renders such protection unnecessary.

By far the greater part of the hundred and ten thousand known species of plants are indigenous in Equinoctial America. Europe contains about half the number; Asia with its islands, somewhat less than Europe; New Holland with the islands in the Pacific, still less; and in Africa there are fewer vegetable productions than in any part of the globe of equal extent. Very few social plants, such as grasses and heaths, that cover large tracts of land, are to be found between the tropics, except on the sea-coasts and elevated plains: some exceptions to this, however, are to be met with in the jungles of the Deccan, Khandish, &c. In the equatorial regions, where the heat is always great, the distribution of plants depends upon the mean annual temperature, whereas in temperate zones the distribution is regulated in some degree by the summer heat. Some plants require a gentle warmth of long continuance, others flourish most where the extremes of heat and cold are greater. The range of wheat is very great: it may be cultivated as far north as the 60th degree of latitude, but in the torrid zone it will seldom form an ear below an elevation of 4500 feet above the level of the sea, from exuberance of vegetation; nor will it ripen above the height of 10,800 feet, though much depends upon local circumstances. Colonel Sykes states that in the Deccan wheat thrives 1800 feet above the level of the sea. The best wines are produced between the 30th and 45th degree of north latitude. With regard to the vegetable kingdom, elevation is equivalent to latitude, as far as temperature is concerned. In ascending the mountains of the torrid zone, the richness of the tropical vegetation diminishes with the height; a succession of plants similar to, though nothing identical with, those found in latitudes of corresponding mean temperature, takes place; the lofty forests by degrees lose their splendour, stunted shrubs succeed, till at last the progress of the lichen is checked by eternal snow. On the volcano of Teneriffe there are five successive zones, each producing a distinct race of plants. The first is the region of vines, the next that of laurels; these are followed by the districts of pines, of mountain broom, and of grass; the whole covering the declivity of the peak through an extent of 11,200 feet of perpendicular height.

From the Boston Cultivator.

Beware of Saltpetre, in the Salt at the bottom of your meat barrels.—To-day we meet an old farmer who was not aware that this article was as fatal to swine as arsenic or ratsbane to the human race. Not long since in our absence, our hired man salted a large boiler of swill with some old salt which had been taken from a barrel in which we had pickled our hams. Of three fed with this cooked food two died. One the man remarked drank freely of cold water immediately and escaped. They could have taken but a few grains each of saltpetre each, yet sudden death was the consequence. No censure could attach to the man—he knew salpetre was fatal, and took this old salt as a matter of economy, not knowing that it contained a particle of saltpetre.

From the Albany Cultivator.

Cabbage Worms.—A writer in the Southern Cultivator says, 'he had a square of very fine cabbages in his garden upon which the worms had commenced making their ravages. Pennyroyal was gathered and scatter-