

Influence of Climate upon Plants.

The constantly increasing demand for new varieties of seeds especially grains, has led experimenters to import and test a large number of varieties. A number of private individuals, as well as our governments, have made large importations from different countries of the world. This demand for new varieties has likely arisen from the fact that numbers of standard varieties, after they had been grown for a length of time, deteriorated, and had therefore to be replaced by other varieties. The beneficial results obtained by exchanging the seeds grown in one locality with those that grew in another has likely increased this demand.

It is astonishing how, in some cases, a change of locality increases the vigor and strength of a plant, sometimes also changing its habits. It is a well known fact that amongst our weed and insect pests, some of those imported from other countries are our worst enemies, and that these, while in their native country, frequently caused but little trouble. Although a change of climate or soil acts in some cases very beneficially on the quality of the fruit and productiveness of some plants, it does not necessarily follow that all changes made at random would produce the same results. An observing and cautious importer may in some cases draw a pretty correct conclusion as to the likely success his seeds will meet with in their new home.

It may be set down as a general rule that all plants have certain climates in which they thrive best. It has been observed that plants have a more dwarfed and branching statue, a more abundant foliage, and that their leaves and fruit possess brighter colors, the nearer they reach their northern boundary of successful cultivation. It has also been noticed that, in the northern limits, a plant is more productive, generally contains more sugar and gluten, and requires a shorter time to complete its growth. In Finland, barley ripens in 90 days, whereas in southern Sweden it requires 100 days to mature. Seeds from the north are said to possess an even and more active germinating power than southern varieties. Some authorities think that this increased activity of the seed is, to a considerable extent, due to the cold winters of the north. To confirm their belief, they imported in the fall seeds from a northerly country; one half of these they kept in as cold a place as possible, and the remainder was stored up in a somewhat warmer place. The result was that that portion of the seeds kept cold germinated better and produced the more vigorous plants.

Seeds imported from the north are likely to retain some or all of the advantages of the north for a time, and are likely to be hardy, early varieties. As the warmer climate of the south produces a more vigorous growth, such imported seeds sometimes give a larger return than they did in the colder climate. Such varieties are, however, likely to deteriorate in a short time, for they soon become acclimatized, growing rank and less productive, and fresh importations must be constantly made to keep up the standard. An importation of southerly seeds, if they thrive at all, are likely to reverse this course, viz., they are more likely with good management to improve upon their first yield, than to diminish their productiveness.

A dry climate produces a comparatively smaller but drier and flintier grain, which possesses good

milling properties. It does not follow that a large, plump grain, grown in a moist climate, is superior to a smaller and flintier grain grown in a dry district, for the increase in size may be entirely due to an increase of water, and this water only acts injuriously on the keeping as well as the milling properties of the grain.

The pea, a leguminous plant, is influenced very little by climate, but the character of the soil has a more marked effect on its growth than on that of the cereals.

Muck: Its Action and Uses.

Humus (muck), the dark, vegetable soil forming the upper layer of our swamps, is sometimes used as bedding for cattle, and, as such, is of incalculable value; for, besides its absorptive power, it has a great manurial value and a very beneficial effect on the texture and composition of both sandy and clay soils.

As a fertilizer it is of considerably more value than farm-yard manure made in the ordinary way. Although the composition of both varies very materially—some samples being more than four times as valuable as others—it can be safely said that, on an average, the muck contains more than twice as much nitrogen as the farm-yard manure. As this element of plant food is—as well as being the most expensive—the one principally contained in both the above manures, it is evident that the muck is of decidedly greater value as a fertilizer. Therefore, when muck is used as bedding, it not only increases the quantity but also the quality of the manure. It has been found that plants may have a short, lingering growth in a soil destitute of organic (vegetable) matter or nitrogenous fertilizers, yet to obtain a vigorous and profitable growth it is of the utmost importance. By it is supplied the nitrogen, an essential constituent of plant food, which the plant otherwise would have to draw from the scanty supply which the rain furnishes. Besides supplying this necessary and stimulating ingredient, the decomposing muck gives off carbonic acid which helps to decompose the dormant mineral constituents of food present in the soil, making it available, thereby adding to the store of available plant food.

The influence muck has upon the mechanical texture of the soil is also one of vast importance. Stiff, cold, clay soils are made more friable by it, allowing a freer passage of roots, air and water through it, thereby increasing its temperature and productiveness. The humus also adds to the retentive power, that is, the power to absorb and retain plant food, thereby preventing its waste. It also helps the soil to withstand the drought better, and, on account of its dark color, it tends to equalize the temperature of day and night. On a sandy soil the application of humus has the same effects in a somewhat more marked degree, with the exception that instead of loosening the already too loose soil, it tends to firm it. In short, humus tends, in all soils excepting swamps and peats, to bring about that "happy medium" so desirable for all profitable farming.

The loss of the liquid manure is one of the most serious ones that can occur in the management of the farmyard manure. Liquid manure tanks, in some cases, rather increase than retard this loss. The use of dry muck—a powerful absorbent—as litter would not only do away with this loss, but it would also, by absorbing ammonia and other gasses, purify the stables and make them more healthy.

As muck possesses very active capillary action it will not dry when left in a heap on the ground, especially if the latter is of a moist character. It is therefore advisable to erect a platform about one foot or more from the ground, with its floor constructed out of narrow boards not laid too closely together, so that the air may pass through the cracks into the muck and the water through them out of it. Put the muck on these boards, if possible, in thin layers, one at a time. To protect the heap from rain, put over it a roof, suspended on posts. Let it project several feet on all sides past the platform on which the muck heap lies, and have it as close to the ground as convenient. In this way the heap is protected from rains, and is not out of the reach of the drying winds.

PRIZE ESSAY.**Country Life.**

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It has been found that one of the best ways to describe anything is to compare and contrast it with something else. Let us then consider life in the country as compared and contrasted with life in town.

Life in the country is free from the narrow restraints and conventionalities of town life; its tendencies are freer and less restricted. As we are all more or less influenced by our surroundings, we should expect to find, and we do find, the resident of the country freer and less conventional than the resident of the town. He has less regard for appearances and more regard for comfort. His walks are not confined by fence or boulevard. If he wishes to rest he does so with the conscious freedom of being alone and unobserved. His eyes are not tired by a wearing sameness of bricks and mortar. He does not need to take a journey to get a breath of pure air. His prospects are limited by hill and horizon, not by warehouse and shop. His work is not in shop or offices with an "eight-foot ceiling," dark, damp and dingy, but in the broad field, under the blue canopy of heaven, with properly diffused light, and a ventilation that insures his never breathing the same air twice; therefore he has the ruddy glow of health, not the sickly pallor of the citizen. He works hard, but he sleeps sound. He spends the day in useful toil, and he has no temptation to spend the night in debauching revelry. If he be prematurely old it is from work and not from worry; it is because he has used his mind too little and his body too much; but even yet he lives to read the obituary of his younger contemporary of the town. Life in the country means health in youth and a green old age.

The country resident knows his neighbors for miles around him, and as is his acquaintance so are his sympathies—enlarged and enlarging. Is his neighbor sick, his services are freely offered, and he relieves his sick brother's anxiety by attending to that brother's work. This rustic way of extending sympathy is more practical than calling and leaving a card. Those living in the country are more dependent on each other, have more in common, than those living in town, and this mutual interdependence and community of aim and purpose, brings country life the nearest to that Utopia where all men are brothers, bound by the common ties of a common lot.

The advantages of an early life in the country and on the farm are inestimable. From the