

replete with the choicest of God's precious gifts. Sometimes one is a little puzzled to arrive at a conclusion as to "what to grow," &c. The evidence as to what is the best is often very contradictory. Still there are a great many considerations which have to be weighed, such as soil, climate, drainage, &c. A certain kind of apple which would be quite successful at Toronto might be a failure at Barrie, or a Burnet Grape Vine fruitful at Niagara might be barren at Ottawa. In view of the extended operations of the Association, it might be in order for the Legislature of Ontario to increase the grant from Government. A sum of money voted for such purposes and objects as are propagated by the Fruit Growers' Association of Ontario for the benefit of the people is money well spent. I am of opinion that the time will come when such a grant will be unnecessary. When the aims and objects of the Association are better understood by the people of this Province, then the Association can easily become self-sustaining.

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#### ELECTRO-HORTICULTURE.

"As regards the chemical products, carbonic acid and nitrogenous compounds, it was thought these would prove rather beneficial than otherwise in furnishing the very ingredients upon which plant-life depends, and, further, that the constant supply of pure carbonic acid resulting from the gradual combustion of the carbon electrodes might render a diminution in the supply of fresh air possible, and thus lead to economy of fuel. The plants did not, however, take kindly to those innovations in their mode of life, and it was found necessary to put a lantern of clear glass round the light for the double purpose of discharging the chemical products of the arc and of inter-

posing an effectual screen between the arc and the plants under its influence. The effect of interposing a mere thin sheet of clear glass between the plants and the source of the electric light was most striking. On placing such a sheet of clear glass so as to intercept the rays from the electric light from a portion only of a plant, for instance a tomato plant, it was observed that in the course of a single night the line of demarcation was most distinctly shown upon the leaves. The portion of the plant under the direct influence of the naked electric light, though at a distance from it of nine to ten feet, was distinctly shrivelled, whereas that portion under cover of the clear glass continued to show a healthy appearance; and this line of demarcation was distinctly visible in individual leaves. Not only the leaves, but the young stems of the plants soon showed signs of destruction when exposed to the naked electric light, and these destructive influences were perceptible, though in a less marked degree, at a distance of twenty feet from the source of light. A question here presents itself that can hardly fail to excite the interest of the physiological botanist. The clear glass does not apparently intercept any of the luminous rays, which cannot therefore be the cause of the destructive action. Prof. Stokes has shown, however, in 1853, that the electric arc is particularly rich in highly refrangible invisible rays, and that these are largely absorbed in their passage through clear glass. It therefore appears reasonable to suppose that it is those highly refrangible rays beyond the visible spectrum that work destruction on vegetable cells, thus contrasting with the luminous rays of less refrangibility, which, on the contrary, stimulate their organic action."—Dr. C. W. SIEMENS, in *The Journal of the American Agricultural Association for October*.