

the largest increase is available. The capital outlay in buildings alone per acre of glass-enclosed area is very high, probably exceeding £5,000 per acre, and the interest and depreciation charges at, say, 8 per cent. thus cost £400 per acre per year. In comparison with these figures the cost of a complete electrical installation for reproducing any season at any time of the year will be small—only 10 to 20 per cent. of the actual present capital, and interest and depreciation charge on the glasshouse. With such an equipment the glasshouse need not be out of service for a single week in the year. At least two, probably three, "springs" could be reproduced annually at any time of the year, and two or three crops taken off, each much larger than the normal annual crop produced by the natural effects of the sun and stimulated only with artificial heat. Moreover, the market price of tomatoes and similar crops produced throughout the winter would (under existing relations of supply to demand) be four to six times that of the summer crop. It is thus by no means unreasonable to look to electrical stimulation of glasshouse crops to produce on the same basis ten to twenty times the actual commercial return now obtained from the same houses, after allowing for all the actual costs of such stimulation.

Nor are the electrical methods very complicated, difficult, or expensive. As far as temperature-regulation is concerned, an automatic thermostat will maintain any temperature required up to 100° F. accurately to within a couple of degrees, throughout the day and night and throughout the year. Similar thermostats are already in regular service for fire-alarm services, and have been well developed for this purpose. The actual temperature to be maintained can be varied as required by a few turns of a screw.

To reproduce the effects of sunlight either ordinary incandescent lamps, or preferably mercury-vapour or other special lamps richer in the ultra-violet rays, may be used, the sunlight itself being relied on in the daytime. By this means the action of the chlorophyll of the leaves in fixing the carbon dioxide from the atmosphere can be continued for twenty-four hours per day, practically doubling the summer rate of growth and enabling the same rate to be continued through the winter as well.

The regulation of humidity will be effected by sprays operated from a small electric pump. The automatic control of the humidity is possible, but it would probably be cheaper to regulate it accurately to the degree required (say, twice a day) by hand, and it would thus be maintained fairly close to the required point throughout the twenty-four hours.

The further stimulation of growth by means of high-pressure discharge or ionization of the atmosphere, and of the roots by galvanic