

BUILDING AND HEATING SMALL CONSERVATORIES.

NOW, that greater interest is taken—mainly through the efforts of the Fruit Growers' Association—in improved hor-

culture in this province, many inquiries may be expected similar to No. 917, in the March number of the Journal, page 118, respecting the construction and the fittings of small greenhouses or conservatories attached to dwelling-houses.

The replies by Prof. L. R. Taft, Michigan Agricultural College, to the three questions in part 2, (a), (b) and (c) in Question No. 917, were not satisfactory. He says, (a) "Four would be ample and three would answer if the coil is at least thirty feet long, provided the temperature does not fall below 25 degrees." But with us the temperature sometimes falls fifty degrees or more below that point. What might the result be in that case? Sometimes, for several weeks, the temperature may seldom rise to 25 degrees. (b) "Four or five lengths, three or four feet long, should supply sufficient fire surface." This 15 or 16 feet of 2-inch pipe, if properly placed, would be ample for four times the length of pipe mentioned. (c) "If properly arranged, the pipes should work all right, as the entire circuit will not be more than 50 or 60 feet." The working of pipes does not depend on their length, but on the height of the upper surface of the coil above the point where the return pipe enters the furnace. Mr. German did not give this most important measurement.

Below, I submit a few pointers, which intending builders of such additions to their dwellings may do well to make a note of.

(1) The building should be constructed of the best available material (especially the glass), the workmanship first-class in quality (not necessarily ornamental), and the overseer of the work should have had some practical knowledge of the difficulties to be encountered in conservatory management.

(2) There should be no glass at the sides or ends of the building above the level of the benches, and a wooden or metal strip about 2 feet wide can be placed (nearly level) advantageously at the top of the roof next the house.

(3) The roof should have a pitch of 45 degrees and a southern exposure.

(4) The cheapest building is that one, the cost of maintenance of which, *i.e.*, the yearly cost of fuel, repairs, insurance, etc., being capitalized, will be the least sum.

(5) Such buildings can be heated cheaper, with less labor and attention and more satisfactorily, with water, than by any other means

(6) The power of its heating arrangement should be easily capable of maintaining a temperature of not over 90° to 95° by day and not less than 45° by night, even if the temperature of the outer air should fall to 25° or 30° below zero.

(7) The measure of the heating power is the quantity of water necessary to maintain this temperature under all possible variations of temperature of the outer air.

(8) It is found in practice that 20 gallons of water for each 1,000 cubic feet of space is sufficient for this purpose, and as

(9) It requires 147 feet 3 inches (nearly) of 2-inch pipe to contain 20 gallons of water, therefore, either of