

younger scholars as a part of their nature-study. In any case a succession of flowering-plants (annuals, biennials, and perennials) throughout the spring, summer, and autumn should be aimed at. The scholars should be encouraged to bring flower-seeds, plants, and bulbs for the border. When seeds are sown a practice should be made of labelling the patch.

"Practical work in the garden should be continued throughout the year, but, while two hours per week will be required in the spring and summer, one hour should suffice in the autumn and winter. The usual length of a practical gardening lesson is one hour, but in May and June shorter periods at more frequent intervals may be desirable for weeding.

"It is not necessary that the cropping of all the plots should be identical, though it is desirable that they should be sufficiently similar to make it possible to compare the merits of the workers. Scholars might be encouraged to select the particular varieties of vegetables for cultivation on their own plots. This introduces the element of individual responsibility. When the scale drawing is being prepared the teacher can best discuss with the scholar the merits of his plan.

"The scholars must be taught to hold a spade rightly, to dig a straight trench, to double-dig or bastard-trench, to use the line in digging, planting, and sowing, to sow at proper depth in trenches properly prepared, to sow not too thick or too thin, to use the hoe and rake properly, to thin and single beet, parsnips, and turnips properly (singling is often badly done), and to prune the fruit trees and bushes properly.

"The rows of vegetables should be perfectly straight, the plots and borders free from weeds, the fruit trees and bushes free from lichen, the plots edged neatly, the pathways kept in good order, the hedges clipped. Tidiness in a garden is of great industrial value, though, of course, efficiency must not be sacrificed to mere appearance.

"Each scholar should keep a rough diary in which to jot down observations on his work and matters affecting it: the preparation of the ground for a particular crop; the quantity of seed used for a given area; the depth of sowing; the date of appearance of first leaf; attacks of insects or birds, and any remedial treatment; the harvesting of the crop, and the amount of final produce, will afford proper subjects for notes.

"Some teachers are too apt to do the more difficult operations themselves. This tendency is most noticeable where the common-plot system is adopted, and should be avoided. The scholars must learn by doing even if they make mistakes. A good teacher will first get the boys round him and make them think out for themselves how a thing ought to be done.

"The teacher should habituate the scholars to note for themselves attacks of onion-fly, bean-aphis, gooseberry saw-fly, black-currant mite, mildew, slugs, birds, weeds, and other pests without any prompting. The best method of dealing with the pest can then be considered. Similarly every scholar should be able to tell from his independent observation how the onion-leaf first emerges from the ground, how beans and peas climb, why couch-grass, groundsel, and the field speedwell spread so quickly, and hence how best to eradicate them, &c. A scholar should also be able to measure the area of a plot by stepping.

"Gardening should be nature-study, but there is much to be done in the class-room in connection with it. The conditions under which seeds germinate or plants grow; the examination and description of parts of plants leading to an understanding of the grouping of plants (*e.g.*, the Brassica family, with similar seeds, seed-leaves, flowers, and fruits); weather-observations; the examination of the garden-soil, its stones, sand, and clay being correlated with its retentivity of moisture—all these need to be dealt with by simple experiment and observation in the class-room. Collections may also usefully be made of specimens showing damage done by insect pests, or illustrating the growth of plants both useful and noxious in farm as well as in garden. Observations of birds as friends or enemies of the garden should be made, and beekeeping adds greatly to the interest and educational value as well as to the profitableness of the garden.

"Accurate and careful interpretation of specimens of plant and insect life with brush or pencil should of course be associated with the nature-study, and form a necessary part of the ordinary drawing-lessons of the school. Drawings might also be made of things that want close study from a horticultural point of view, such as a prepared graft and scion, or slips prepared for planting. In the garden the scholars should sketch rough marginal illustrations in their notebooks of the toolhouse and tools used, or of a well-pruned fruit-tree—indeed, anything of interest to them in their work. Before the beginning of active work in the garden in the spring, drawings should be made to show the proposed cultivation of the plots.

"Plans of the several plots and of the whole garden should be drawn to scale from actual measurements. Produce should be weighed and measured. "Profit and loss" accounts should be kept, with approximate allowance made for labour, rent, and depreciation, and repair of tools. Numerous problems should be set, based on the cost and quantity of seed and the extent of the land cultivated, as against the value and quantity of produce.

"Composition should be connected with the gardening-work throughout the course. It should always be original—the scholar's own thoughts, drawn from his own experience, and expressed in his own words. Every scholar should be required from time to time to write a connected account of the cultivation of some particular crop in which he has taken a practical part, using the rough notes in his diary for the purpose. Scholars should also be encouraged to read up in gardening books or periodicals the particulars of any process on which they are engaged, or any crop which they are cultivating.

"It is very desirable that arrangements should be made for saving seed. This is in itself very educational, and there is no reason why in a well-organized county the saving and exchange of seeds should not result in a large reduction of expenditure.