check on the progress of any line grown in the nursery.

The system has proved quite adequate for the needs of a small nursery but as we have expanded and speed of turnover has increased a number of frustrations are creeping in. We are not able to keep track of plants sold from a batch — that is, how long the 1823 plants in location 41A have taken to sell out. It is often necessary to pay a visit to this location if someone other than sales personnel wishes to know the exact numbers remaining, and often a second batch may not be potted in time to follow on from the previous one. In other words, as we grow so does the gap in communication between Sales and Production.

The ultimate system would tie in all the functions of the nursery, from wages, purchases, stock and production control to sales. This is theoretically possible with the system described but to do so would break the first fundamental requirement for system efficiency: the time and effort required would prove too costly. However, the system described here will evolve fairly readily to a higher level system such as provided by a computer. Whether the information generated by electronic data processing is worth the cost of installing a computer-based system is a decision for each individual nursery. However, computers are here to stay and propagators as well as nurserymen in general should be willing to investigate further their potential.

GRAFTING MAPLES

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Although taxonomists have divided the genus *Acer* into 13 or more sections this is not always a true guide to compatibility. The species, *A. pseudoplatanus* is compatible with a considerable number of species which are botanically well outside their own section; also the cv. *Atropurpureum* which has a purple coloring on the reverse of the leaf seems to be more compatible with other species. *A. platanoides* can be grafted onto *A. pseudoplatanus* 'Atropurpureum' quite readily but with difficulty onto the common form. *A. pentaphyllum*, not yet placed taxonomically but is superficially similar to the *Trifoliata* section, is compatible with *A. pseudoplatanus*, as are *A. saccharum* and *A. pensylvanicum*, each in different sections. *A. palmatum* is also reasonably wide in compatibility, particularly with some of the "snake bark" group, e.g. *A. laxiflorum*, etc. There is still room for considerable study in this field.

Although many maples can be budded or even grown from cuttings — and some are better propagated this way — we find that in a nursery where most plants are container-grown that grafting fits into our schedule much better than cutting propagation. Any type of graft can be used but beware of cultivars having pithy wood, these are not very successful when using whip and tongue or cleft grafts. Overall we have found the veneer type graft most successful; we only make the cut bark-deep on both stock and scion. A short top is left on the stock until the scion has started growth. Contrary to most plants, maples should not show excessive sap flow at the time of grafting, or budding for that matter, as this tends to "drown" the scion. We use plastic ties and no grafting wax. Ties must be cut as soon as a reasonable take is assured as excessive callus often forms under the plastic, particularly with small scions, causing binding. An interesting method of grafting is used by some Japanese nurserymen. They make a T cut in the bark (as for budding) make a long angle cut on the scion — on one side only — then insert the scion and tie; the stock is then cut off close to the top of the tie.

The advantages we see in the veneer and in the Japanese methods are that the greatest possible width of cambium is exposed, so that success is more likely. These methods are also more suitable where scions are very small and stocks are quite large — e.g. in some forms of *A. palmatum*. Many of the maples have very thin bark and cambium so that every attempt should be made to improve the chances of success.

Although grafting can be done outside we have better results in a glass or plastic covered house where water can be kept off the point of union until callusing occurs. In Australia we find early August (late winter) a very suitable time but have had even better results in late summer or early autumn. For late winter grafting we place stocks in the glasshouse for about four weeks to start a gentle sap flow and store scions in a refrigerator if we are forced to be a little late — otherwise we pick the scions as required. With late summer grafting we remove all leaves from the scions and place grafted plants in a plastic-topped frame in the glasshouse for approximately eight weeks. They can be overwintered outside in our comparatively mild climate. Although the ties should be cut at this time the excess stock can be removed any time before spring. For most tree and shrubby-type maples we graft as near to the ground as practicable but for weeping forms and horizontals we vary the height up to 2 m to suit a variety of purposes.

First or second year seedlings are usually used for the rootstocks. Seed of most species should be sown as soon as ripe in the open ground or in deep boxes. Cover seed 1 to 2 cm with sand. If seed has dried out soak it in warm water for several hours, then mix with moist peatmoss, place in a tight plastic bag, and store in the bottom of a refrigerator for 6 to 10 weeks. Inspect each week and plant immediately if any sign of germination is seen. Some species, such as *A. griseum*, may take two or even three years to germinate but the majority come up quite well in the first spring if picked and planted immediately.

THE IMPORTANCE OF THE ENVIRONMENT IN GROWING AFRICAN VIOLETS

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African violets are one of the most specialized of ornamental crops. They are easily propagated from seed or leaf cuttings. Fully matured leaves from the outside of flower stalks are preferred for propagation. Adventitious buds are rapidly formed and develop into plantlets.

African violets are not a difficult crop to grow if you understand them and their conditions. The important environmental considerations are as follows:

Light. The emphasis is on light intensity rather than daylength. The optimum solar radiant flux density is 1100 ft. candles. Extensive yellowing occurs in the foliage of African violets which are exposed to radiant energy levels above 1200 ft. candles. This is due to chlorophyll destruction by the radiant energy. Light intensty above 1100 ft. candles reduces the number of flowers per plant in some cultivars. More commonly, the initiation of flowers by African violets is seriously limited at radiant flux densities below 300 ft. candles. A radiant flux of 100 ft. candles for 12 hours per day is enough to produce satisfactory plants with good formation and foliage color, but is insufficient for appreciable flower production.

With sunlight the optimum radiant flux for both vegetative growth and flowering is 1100 ft. candles for a minimum of 7 hours per day. However, radiant energy from "daylight" fluorescent lamps at 500 ft. candles for 12 to 18 hours a day