

## A LOOK AT BOSKOOP

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Probably, many of you have visited Boskoop, but it is likely that there may be a few members of the Society who have not had this opportunity. Therefore, in view of the day-visit the Society is organising to this area which is renowned for hardy nursery stock production, I thought it would be useful to, firstly, give some background to this area and, secondly, relate briefly four practices on propagation, which I found particularly interesting when visiting the area eighteen months ago.

Boskoop is the most important nursery centre in Holland. It covers a total area of around 1500 acres which is made up of approximately 750 nurseries. The average size for a nursery is about two acres and because of this small size, production is very intensive. The top soil is ideal for nursery stock production and is composed of 34% peat, 28% clay and 38% sand. The soil pH is in the region of 4.5 — 5.5. Despite many advantages the nurserymen face three major problems. These are as follows:

1. The peaty-clay subsoil makes construction of roads and buildings very expensive.

2. Each year soil has to be imported into the nurseries, firstly because the soil undergoes a certain amount of shrinkage each year, and secondly soil is removed with the root-balls when plants are lifted.

3. Expansion in areas for further production is very limited. Beyond Boskoop the soil type changes suddenly to one predominately containing clay particles, thus making it unsuitable for nursery stock production.

The water table is maintained at approximately two feet below the surface. The control of this level is particularly important during the summer months.

Around 90% of the output is exported, mainly to Great Britain (27%) and West Germany (24%). Other countries to which exports are made include Sweden, Canada, Switzerland, France, Belgium and Italy. Out of the 750 nurseries previously mentioned, approximately 140 are exporters. The primary purpose of the remaining 600 nurseries is to produce plants for the larger export nurseries. The research station (Proefstation voor de Boomkwekerij) sets out to solve many of the problems which the nurserymen face. It is financed by three approximately equal contributions, one-third from the nurserymen by individual subscription and the marketing board, one-third from the Ministry of Agriculture and the Province of South Holland and one-third from the sale of plants from experiments.

I would now like to turn to the four propagation practices:

#### 1. *Stock beds*

On many nurseries an area near to the propagation unit is devoted to growing on plants specially to provide a source of cuttings. In my opinion, the main advantages of this are as follows:

1. A source of cutting material is readily available.
2. One can be very sure that one is propagating material true to type. This is useful if one had a good clone of a particular species which is, for example, renowned for its form or its ease to root.
3. The necessity to take cuttings from material lined out in the nursery, is greatly reduced.

I think this practice would be particularly useful to many nurserymen in the U. K., as basically it would improve the management within the propagating unit.

On some nurseries I noticed well-maintained hedges used to supply large quantities of vigorous cutting materials, e.g. *Magnolia X soulangeana*. Layer beds were very much in evidence. In a particular case one well-established plant of *Magnolia X soulangeana* produced up to 600 layers each year.

#### 2. *Humidifiers*

Although propagating with the use of closed cases and cold frames was very much in evidence, the use of humidifiers was seen. These were made by Defensor of Zurich, Switzerland. The units seemed to be used for soft wood cuttings. The temperature in the glasshouse was maintained at a particularly high level, 95°F or above. In order to assist in maintaining these high temperatures, the inside of the glasshouse was lined with polythene, the vents were kept closed and space heaters were fitted in the glasshouse. It was pointed out that a disadvantage of these humidifiers can be the minute water particles condensing on the underside of the glass, thus giving rise to excessive drip onto the cutting beds. However, this can be overcome to some extent by increasing the cubic capacity of the glasshouse, e.g. increasing the height to the ridge.

#### 3. *Dilute Solutions of Growth Regulators to Promote Rooting*

A technique used, after the cutting had been prepared prior to insertion, was to 'soak' them in a dilute solution of a growth regulator for between 18-24 hours. Large trays lined with polythene were used as containers to hold the cuttings. The cuttings were packed into the tray so that the level of solution was above the wound made at the base of the cutting. This treatment seemed to be favoured for conifers.

#### 4. *Acer palmatum atropurpureum*

On one nursery during June, cuttings were made with two pairs of leaves and a basal node. The cuttings were wounded and then treated with 1% I.B.A. and subsequently inserted into an outside frame containing a 2 : 1 ratio of a peat/sand mixture. Prior to the replacing of the frame lights, poly-

these sheeting was placed directly over the cuttings. It is removed and shaken at regular intervals to remove the excess condensation. After rooting had taken place, one of the top pair of leaves was removed so as to encourage growth from the auxillary bud. This technique was claimed to produce some excellent results.

Finally, I must say how impressed I was with the excellent quality of nursery stock grown, together with the large quantity of material produced from such a small area. Boskoop being a small intensive area also meant that the nurserymen were able to maintain close liaison with the research station. This unique situation allowed frequent observation of experimental work and rapid application of promising results. In general, it is difficult to give a comparison of production between Boskoop and ourselves, as circumstances are very different, but I do feel a great deal of benefit can be derived from the observations of many of the propagating techniques used; in particular, those used for some of the high value lines.

#### HOW TO KEEP UP-TO-DATE

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First of all, I would like to say how very much I have enjoyed listening to the other speakers today. Each of them has discussed a particular aspect of the science of plant propagation in which he is virtually a specialist. An immense amount of experimentation has been necessary to adapt the results of pure research to practical and commercial technique. One of the most fascinating sidelines in scientific information work can be to look through the published work on a particular crop — such as chrysanthemums — over a period of years and to realize how the use of aids such as plant growth substances, soilless composts, virus-free material and precision equipment for controlling day length and temperature have taken so much of the uncertainty out of raising plants. New developments take place so quickly that one always has an uneasy feeling that one may be missing something of importance or ceasing to be in touch with the latest work; also there sometimes seems to be a great gulf between the writer of a research paper with his plot replications and computerized data and the man who wants to know, perhaps, what is the best time of year to root cuttings of his new rhododendron which might be a best-seller.

I think that the 4 most important ways of getting information are these:

1. Make full use of the advisory services.
2. Read the growers' journals.