

R. PLATTS: There are, in my opinion, two criticisms of the crate: one they are difficult to load; it is a tricky business with a forklift truck, and then the receiving nurseries may not have one.

B. MACDONALD: Would you alter the crate in any way?

R. PLATTS: No, I think reducing the large gaps between the wires gives problems when loading small plants into it. I did say it was difficult to load, but that was to start with — and practice makes perfect.

VOICE: You didn't mention potting machines?

R. PLATTS: They did have a Javo machine, but with the large staff of 140 they cut down during the winter and concentrated on hand potting with the remaining staff.

## A YEAR ON AN AMERICAN NURSERY

ALAN J. HARGREAVES

*John Hargreaves and Sons  
Gedney Dyke Nurseries  
Spalding, Lincs.*

From September, 1976, until September, 1977, I worked on the James Wells Nursery, New Jersey, U.S.A., on their English Student Programme.

Firstly, I would like to give a brief history of the nursery for those who are not familiar with it. Jim Wells left England for the U.S.A. at the end of the last war and, after spending a few years on other nurseries, he took 20 acres near the coast in New Jersey in the late 1950's. After a few years of growing quite a wide range of nursery stock the range was cut down to mainly rhododendrons and azaleas.

In 1967 the English Student Programme was started when two students from Pershore College went over to New Jersey. And so it was in 1976 that David Hill and I, having both completed our N.C.H. at Hadlow College, applied for a job at Wells Nursery. After an interview at Pershore we were selected, together with two Pershore students to go over there for a year. The flight over and back was paid for by Jim Wells and this was repaid during our 12 month stay. Whilst there we had a large apartment on the nursery. I would like to mention at this point that it is extremely difficult to obtain a work permit or a 12 month visa for the United States, but, as Jim Wells had been bringing students over for 9 years, there wasn't too much of a problem.

**The Nursery.** About half of the 20 acres consisted of polythene tunnels, greenhouses, buildings, yard area, etc. and the rest was used for field production of rhododendrons. All the plants were propagated from cuttings under mist in a peat/perlite mix. The broad-leaved rhododendrons were propagated from cuttings from July right through to Christmas. A relatively thin cutting was taken, about 4 inches long leaving about 5 or 6 leaves. They were wounded quite heavily and various hormone powders were used as they had found that different cultivars rooted better with different mixtures, e.g., 1% IBA + 0.5% NAA + 0.5% Benlate, or 2% IBA + Benlate, or 0.8% IBA + captan.

The cuttings were inserted into the peat/perlite mix in beds heated by hot water pipes in a sash type greenhouse, which was heavily shaded during the summer months. Some of the easier rooting rhododendrons were propagated in double skinned heated polythene tunnels under mist, but without bottom heat. All the deciduous azaleas were propagated in early summer with mist and bottom heat.

The container stock was grown in a range of composts depending on the type and size of plant. The large rhododendrons in 3 gallon containers were grown in a peat/bark/grit mix; the deciduous azaleas in 1 gallon containers in a peat/perlite based compost; the larger deciduous azaleas in a peat/grit mix. To most of these mixes extra limestone, phosphates and granular insecticide were added; the insecticide to protect against the dreaded vine weevil. The peat was Canadian. The bark was composted on the nursery by the addition of prilled urea at the rate of 6 lbs urea per cubic metre of bark; the bark was watered and turned as the urea was added and then covered for two weeks. It was then turned every 2 to 3 weeks and, after about 10 weeks, it was ready to use.

**Mixing.** All the compost mixing was carried out on the concrete yard using the front end bucket on a tractor. It was then stored on the yard, covered over with plastic sheets until used.

**Potting.** We had a large double-skinned polythene tunnel, approximately 30' × 120', where we did most of the potting. High in the side of the house there were two swing doors built in, so that when opened, the compost could be fed through with the tractor bucket onto trailer benches below. After potting, all plants were drenched with a weak Benlate/Truban fungicide mix.

**Feeding.** As well as the superphosphate in the compost, a liquid feed of 20-20-20 plus trace elements was applied every 2 to 3 weeks in fairly low quantities. In July a high phosphate feed was used instead of the general purpose one in an attempt to improve flower bud initiation. The feeding programme for the deciduous azaleas was very much the same, bearing in mind that

they are extremely hypersensitive. They were pinched back in May and again in June. The deciduous azalea cuttings are potted off in June or July and grown on under poly tunnels and given light treatment at the rate of 20 minutes during each hour throughout the night until the autumn.

**Jeeps.** At some time or other, every nursery has to decide what method to use in order to transport stock around the nursery. At Wells nursery we had two army type jeeps with large platform type benches built on, one on the back and one on the front. They carried quite a lot of plants at a time and were very versatile and efficient.

**Spraying.** A strict spraying programme was maintained, mainly to combat the vine weevil which, if left unchecked, could wipe out a batch of plants in just a few weeks. An orchard type mist-blower was used for spraying; this was a PTO driven mounted sprayer which blasts a mist of spray from the side of the sprayer covering an area of about 25 foot at a time. Because this jet of swirling mist hits the plants from the side and not overhead we were able to achieve maximum penetration into the dense foliage of the rhododendrons.

Compared with the Americans, we in this country have very relaxed regulations as regards the use of chemicals in horticulture. On American holdings only certified operators may apply some of the more dangerous insecticides, or someone under the supervision of such a person. To obtain this certificate the operator must show a basic knowledge of the types of insecticides, their modes of action and the use of the various safety clothing and equipment when using the chemicals. These operators also have regular blood tests to check for any chemical build ups.

For all insecticide applications and poly-house sterilisations, we wore full rubber-suits, rubber boots and gloves and full face masks and respirators which were extremely uncomfortable, especially in mid-summer working in the full sun when the air temperature was in the 90's. A shower was compulsory after all spraying operations. Actually the warmest day we ever recorded was 103°F when we were knapsack-spraying with paraquat around containers and taking a dip in the swimming pool between tanks.

**Overwintering.** In New Jersey the temperature extremes are much wider than in Britain, often falling 20° below freezing. All the container-grown stock has to be overwintered under polythene tunnels, the tunnels being covered in October and the polythene cut away in late April; this meant a lot of time spent cladding tunnels. We visited one nursery in Pennsylvania, the Conard-Pyle Nursery, which had 22 miles of polythene tunnels and had several crews cladding to get the job done.

We began cladding our tunnels in early October, doing it mainly at nights and weekends on a sort of contract/piece work basis. By the end of the month we still had quite a few to do, when suddenly early one morning, Jeremy Wells marched into our apartment to say that a freak storm was blowing down from Canada and all the plants must be protected by the evening. Now, Jim Wells had told us that his son was the "President of the Mountains out of Molehills Society" but, nevertheless, we worked through the wind and rain to clad these tunnels in record time and, true to Jeremy's word, a storm of driving sleet and snow reached us by morning.

With the polythene cladding over them, the rootballs in the pots still froze solid in mid-winter and, even when the temperature was 15 or 20 degrees below freezing at mid-day, with the wind chill factor making it even colder, the sun would shine brightly and the polyhouses could get quite warm, so we had to irrigate to get some moisture around those frozen rootballs.

**The Move.** During my year out there I was involved in the moving of the nursery from New Jersey to the Blue Ridge Mountain Range in North Carolina. Every piece of equipment, every tool, implement, every single poly-house, all the rooted cuttings and growing stock — the whole nursery, in fact, was transported in 40-foot trucks, 750 miles by road over a period of about two years.

There were many reasons for moving the nursery, probably the most important reason was that New Jersey is not the "Garden State" any more and there was little chance of expansion in that area. After looking at many different areas in the States, Jeremy Wells finally decided on Transylvania County, North Carolina. The climate is ideal for rhododendrons as the Catawba Mountains are nearby, home of the Catawbiense range of rhododendrons. A 60 acre site was found, approximately half rolling pasture and half wooded hillside. The soil is ideal for growing rhododendrons, and there is a virtually unlimited water supply from the mountain streams supplying a central pond. The land is situated in such a manner that it is protected from the north, east and west, and open to the south allowing extremely high solar radiation. Drainage is good. Bark is obtained locally. North Carolina is centrally situated for supplying the entire eastern half of the United States.

There are a few disadvantages as well. Jeremy recorded a 70°F temperature change in 12 hours and that is supposedly a very common occurrence. He has also had frost as late as May 20th and as early as September 10th.

And so piece by piece the nursery was dismantled and moved. The hoops in the poly-tunnels were originally 4 foot

apart, but after a trial on a couple of houses it was found that with the hoops at 8 foot intervals they would still stand up to the 50 or 60 inches of snow which falls every winter. Every house had half its hoops removed and these were moved down to Carolina for erecting.

Propagation was carried on in New Jersey for a couple of years while the growing side was being built up down south by Jeremy, and it was during one of the main plant moving periods that a major catastrophe occurred. A 40-foot truckload of plants left the old nursery, supposedly bound for North Carolina but, the trucker had other ideas and hi-jacked the lot. The truck and plants disappeared including the entire stocks of some cultivars. There seemed to be no chance of recovering the plants. The situation was well publicized in the "American Nurseryman" and, to cut a long story short, the whole load was recovered essentially intact. The plants had been sold by the hi-jackers to various retail outlets as far south as Florida and Alabama for only a fraction of their value but, fortunately, after hearing of Wells' crisis, the retail nurserymen contacted them and almost all the stocks were recovered — some a little worse for wear.

Since I left the States the new nursery has expanded rapidly; 130,000 rhododendrons and 60,000 deciduous azaleas are being propagated this year and Jeremy is hoping to double the quantity within 3 years.

## QUESTION BOX

CHAIRMAN — B. MACDONALD

1. When growing holly cuttings in double glass frames, would leaf drop be caused by a) too high a temperature, b) too high a light intensity, or c) any other factor? The cuttings were taken in late September and dipped in Seradix 3

VOICE: I got leaf fall when the cuttings were too close in the bed.

DOUG HARRIS: I always assumed it was the high temperatures.

B. MacDONALD: Could it be too high an air temperature? My experience particularly with *Ilex aquifolium* types is that they are prone to this, taken in late August or early September.

2. Have any members tried the new range of Vitax Q.S. fertilizers? If so with what results?

VOICE: We have just completed a small trial but it is still too early for the results?