

might mask high handling costs inherent in the systems. He felt that a more flexible system using mist under "walk-in" polythene tunnels would be more satisfactory particularly as a series of crops could be rooted in the same area in a single season thus off-setting the initially higher capital costs. A cautionary note was added here on the use of the dense white polythene, available in Great Britain for "walk-in" tunnels. Whilst this type of polythene seemed to provide a good growing environment in conditions of high light intensity, some nurserymen had found that the reduction of light was too great in poor light conditions in spring.

In conclusion it was felt that the types of structure described provided the nurseryman with a number of alternatives which might fit into his system of production. It was important, before adopting one of these systems, to consider the end product the nurseryman wished to achieve and to use the system appropriate to this. It might be worthwhile to divide the subjects being produced by cuttings in a nursery into those which were difficult to root, where traditional methods would give the best results, and those subjects which were easy to root, where a simpler method provided by the use of polythene tunnels might be successfully adopted.

DISCUSSION GROUP REPORTS

Group B.

Field Budding

CHAIRMAN — STEPHEN HAINES

The Group was mostly composed of members with considerable experience in the practice of budding. We were, therefore, able to be fairly specific in our discussion, having a useful blend of commercial, research and advisory experience to draw upon, and it is proof of the interest in this subject that such a knowledgeable group wished to exchange views and information.

On 20th July several members had attended the Open Day at East Malling Research Station, when field budding problems had been discussed. Talking to various growers and to the East Malling staff during the visit, it was apparent that many had suffered low bud takes due either to frost damage or to other reasons which were not too obvious. Although at East Malling the frost damage was on apple buds, many growers were more concerned with bad bud-take on *Prunus* species, particularly on the ornamental cultivars.

The Chairman, having encouraged everyone to take part in the discussion, launched the debate in typically "John Blunt" fashion by

asserting that, “we are less capable of achieving high bud takes than were our predecessors. What are the reasons?”.

C. G. Thomas from Long Ashton Research Station suggested that virus infection could be a contributing factor and wondered how many growers were using virus-tested material for propagation. He said that bud take at Long Ashton had been improved with *Pyrus malus* and apple varieties since the inception of virus-tested rootstocks and bud-wood. They also used the inverted T method of budding and subsequent growth had improved. Commercial growers felt that in budding cherries there was little obvious benefit between using clonal stock ‘P. F. 12/1 and *P. avium* seedling stocks; there seems to be little factual evidence one way or another.

The Chairman then listed the following figures for ornamental cherries which represent the percentage of live buds on the same nursery but in different years.

Prunus cultivar	Percentage live buds	
	A.	B.
P ‘Accolade’	57	90
<i>P. avium</i> ‘Flore pleno’	57	86
<i>P. serrulata</i> ‘Kanzan’	37	90
P ‘Pink Perfection’	77	98
<i>P. serrulata</i> ‘Hillierii Spire’	66	86
<i>P. serrulata</i> ‘Tai Haku’	42	90
<i>P. serrulata</i> ‘Ukon’	45	77

List A is for trees budded on stocks planted in ground which had previously been heavily manured; the stocks grew vigorously, and simazine (1½ lbs/acre active ingredient) was applied in spring before budding and in autumn afterwards. Trees in List B received neither manure nor simazine and stocks grew less strongly. All buds had the wood removed. List A represents the typical bud take over the past five years.

Some time was spent exchanging opinions on vigour of rootstocks at time of budding, the ideal stock to plant, timing of budding, selection and condition of budwood and herbicide treatments, and reference was made to the I.P.P.S. budding experiments. Was the breaking-over of the stock before or after budding beneficial, particularly with *Acer platanoides* cvs. or *Betula* spp? John Gaggini told us of the success he had seen with birch budding in America but no member could claim any consistent success.

Peter Wiseman stressed that production of ideal budding wood could be achieved from well managed hedges or mother trees,

rather than from using wood from production areas. One member observed that wood sent by post usually succeeded despite sometimes being far from peak condition, and most of us had to agree. In fact H. R. J. Byford had received wood in various ways, some wrapped in cotton wool and others with their leaves still attached, yet even these had produced a fair crop. We wondered whether, perhaps, we should let buds and stocks go past their fastest growing period before budding. M. E. Roberts mentioned success with *Acer negundo* cvs. budded in September and others had had similar experiences.

Many references had been made to the various forms of budding and H. R. J. Byford of East Malling and C. G. Thomas of Long Ashton were surprised at how many nurserymen still removed the wood from the back of the bud; for many years they have left the wood in the bud — the bud being thinly cut. Now with *Malus sylvestris* and apples they favour chip-budding which, as some of us had seen at East Malling, gives more growth in the maiden year. Dr. Altman had some experiences with chip-budding citrus, using six-month old rootstocks and very soft budding wood, which had given good results. In Dr. Robinson's talk, it was mentioned that in Japan the plastic ties binding the chip buds were removed the following spring; but at Long Ashton we were told, five weeks after budding is considered the best time for removal. Apparently there is little experience so far in chip-budding cherries and we wondered how *Acer* would react to this method. D. Leaman said that he left the wood in his *Acer* buds and felt it was worth trying chip-budding.

Following our discussion, many of us will be trying these different methods of budding and of rootstock culture before and after budding. The commercial members felt their problems had been given a real airing and the non-commercial members seemed moved to look into the obvious difficulties confronting the trade. We look forward to meeting again to compare our results a year hence.

DISCUSSION GROUP REPORTS

Group C.

Bench Grafting

CHAIRMAN — DOUGLAS WEGUELIN

The Chairman opened the discussion by giving a list of subjects for which bench grafting was particularly important, either because they were difficult to root by other means or because, when raised from seed, they might produce very poor forms. The list included —