

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 —

*Acer*, particularly *A. palmatum* 'Dissectum' forms  
*Berberis x lologensis*  
*Betula* spp.  
*Cedrus atlantica* 'Glauca'  
*Cytisus battandieri*  
*Fagus* spp.  
*Hamamelis*  
*Juniperus*  
*Malus* spp. (a useful way to build up stock).  
*Picea pungens* 'Koster'  
*Pinus* spp.  
*Prunus* spp.  
*Rhododendron* spp.  
*Robinia pseudoacacia* 'Frisia'  
*Rosa* spp. especially *Rosa* 'Mermaid'.  
*Wisteria*.

The first subject discussed was *Wisteria*. Stocks raised from seed sown in spring should be ready for grafting in the following spring. The top of the stock should be cut well below any eye and a wedge graft should be used. The plant should then be potted and put on gentle bottom heat. They callus quickly and grow away very fast. When stocks are short, pieces of roots can be used with very good results.

The second subject was *Pinus*. The question was raised as to whether it was necessary to use a five-needled stock for grafting a five-needled variety, likewise a three for a three? Could *Pinus sylvestris* be used for most pines? M. G. Adcock claimed that the stock was not all that important though the growth of the tree could be regulated by the type of stock used. He grafted *P. pinaster* (*P. maritima*) on *P. strobus* but a good rule was to graft the smooth-barked varieties on *P. strobus* and the rough-barked ones on *P. sylvestris*. The Japanese use very dwarf stocks for their Bonsai work.

**Magnolia.** It was agreed that *M. kobus* was the best stock, but it was an advantage to use a stock different from the scion as suckers were so difficult to see. A lot of work could be done on chip budding, which was widely used in Japan.

**Betula.** Why is it sometimes difficult to get the scion to start growth? It was suggested that the cause might be that the scion wood was too soft; harder wood was preferable. The plants should be kept in the grafting house until the first flush of growth was over, then they should be planted out and they would grow away again. It was very important to have the stocks well dried off before grafting. Bare-rooted stocks can be grafted quite successfully if potted ones are not available.

To the question "How do Hilliers manage an 80% take with birch grafts!" — their answer was, "We have just celebrated our Centenary!"

**Cedrus atlantica 'Glauca'.** If 1-year seedlings of *C. deodara* are potted up they will be ready for grafting the following autumn or spring. Autumn grafting is preferable and is best done in a cold frame where the temperature does not rise above 65° F. When grafting in the spring, use only very little bottom heat or the roots will be killed. Adcock stated that at Hilliers they often grafted cedars in the frame which the stocks had been bedded in — leaving the grafted plants in the same frame.

**Fagus.** Difficulties arise whenever grafting is done too late and after the sap has begun to rise. The conclusions drawn were that whenever possible grafting should not be done when the sap is rising, the stocks should be very dry, and if grafting was unavoidably late, it was suggested that a cut should be made below the graft to drain the sap thus preventing flooding the scion. This technique might also be applied to *Betula*.

**Cytisus battandieri.** This should be grafted on 1-year *Laburnum* seedlings, using a whip and tongue graft which will unite rapidly if given bottom heat. The scion wood should be taken from proven good flowering stock plants; some seedlings flower very badly.

**Hamamelis.** Problems arise in obtaining adequate stocks of *H. japonica* and *H. virginiana*. An allied plant, *Distylium racemosum*, is easy to graft on and can be grown from cuttings; it has the advantage that suckers are easily recognised, but little is known about its hardiness. It was advised that it should be planted deeply with the union below ground level. More research is needed on this stock.

**Picea pungens 'Koster'.** A discussion arose on how the Japanese technique of splitting the stock, described by Dr. Robinson in his paper at the current conference, might be used for this subject. It was thought to be worth trying. White plastic bags to protect and maintain the right environment for soft scions was also worth consideration. The discussion ended with a simple demonstration of tying a graft with a rubber band, which avoided making an actual knot and saved a lot of time; simplicity to perform but, regrettably, too complicated for your reporter to describe in words!

The final conclusion of everyone was that these small discussion groups were an excellent innovation and a 'must' for future conferences.