are too small and indistinct for effect. Nobody should be content with this but should go for a really boldly marked clone like *Aucuba japonica* 'Crotonifolia'. It thrives in shade and any branches that come pure yellow here will be the safer from scorching, to which they are otherwise subject. This is a splendid evergreen shrub both in the garden and when cut for the house.

Another evergreen shrub of astonishing hardiness, considering its Tasmanian provenance, is *Helichrysum ledifolium* (Syn. *Ozothamnus ledifolius*). Nowhere that I have heard of did it suffer in Britain in the 1979 winter. It makes a dense dark green 3 ft. plant, relieved by the pale yellow-green of its shoot tips which show the undersides of their leaves. In May the expanding flower buds are a rich shade of burnt orange, similar in coloring and season to that of *Euphorbia griffithii*. This is their finest moment, before they expand into a white frost of tubular flowers. At all seasons the shrub wafts a strong aroma of stewed prunes. Cuttings are easily rooted, like lavender or rosemary in early autumn, but plants are a little slow to make up.

DISCUSSION GROUP REPORT
DAPHNE PROPAGATION

CHAIRMAN — A.R. CARTER

The difficulties of producing daphnes in commercial quantities attracted quite a number of people to this discussion session chaired by A.R. Carter.

It started with a recommendation of the book, *Daphne*, by C.D. Brickell and B. Mathew, published by the Alpine Garden Society.

SEED

A list of plants that provided a seasonably reliable seed set was given. Although experience was limited among group members, it was stated by one that his *Daphne giraldii* did not crop regularly.

D. acutiloba
D. giraldii
D. laureola
D. longilobata
D. mezereum
D. m. 'Alba'
D. oleoides
D. pontica
D. retusa
D. tangutica

In general, seed should be collected before the berries are fully colored. Birds can be troublesome and greenfinches will take the berries whilst still green.

Arthur Carter described an experiment with seed of *Daphne mezereum* taken from berries at different stages of ripeness on 15 June 1974. The results expressed as numbers of seed germinated in spring 1975 showed that real differences occurred. The treatments were replicated and germination was expressed as percentages of a possible total of twenty-four.

Seed source	Percent germinated
Red fruits	17
Green fruits	42
Red fruit — seeds soaked in water — 1 hour	29
Red fruit — sees vigorously rubbed	79

When the seeds were extracted from berries, particularly red ones, the testa was coated with dark green, almost black film; a vigorous rubbing with a cloth removed this.

In another season, the effect of gibberellic acid (GA) was investigated on germination of seed of *D. mezereum*. The source of GA was 'Berelex' and seed from green and red fruits was sown untreated and the germination was compared with that from red fruits soaked for twenty-four hours in water, 100 ppm GA or 200 ppm GA.

Seed Source	Treatment	Percent Germination
Red fruits	Nil	23
Green fruits	Nil	30
Red fruits	100 ppm GA	69
Red fruits	200 ppm GA	69
Red fruits	water	69

The need for a grower to use the solvent of any chemical — in this case, water — is amply demonstrated as without it being included in this trial, it might have been assumed that gibberellic acid was doing some good.

It should also be pointed out that the seed for these trials was gathered from a single bush and there is no guarantee that all plants of this species will behave in a similar manner.

Seed of *D. giraldii* germinated readily the first spring after sowing fresh seed. Arthur Carter also reported on two lots of seed of *D. bholua* received indirectly from Sir Peter Smithers in Switzerland. In neither case did germination occur and yet in an earlier instance The Royal Horticultural Society had a batch in late May 1974 and germination occurred in six weeks. It is possible that seed loses viability quickly under unsuitable storage conditions.

It was suggested that seed should be cleaned and sown immediately or stratified, avoiding dry storage where possible.

Daphnes frequently contain virus and seed is less likely to transmit this problem than vegetative propagation.

CUTTINGS

Many daphnes can be propagated by cuttings and root promoting auxins are often used but in many cases are probably not essential.

There seems to have been comparatively little experimental work to guide us, but traditionally quite a range are propagated by soft or half-ripe cuttings.

Soft Cuttings

D. aurantiaca
D. bholua
D. blagayana
D. × burkwoodii
D. cneorum
D. collina
D. genkwa
D. giraldii
D. collina var. neopolitana (Syn.: *D. neopolitana*)
D. odora and forms
D. retusa
D. sericea
D. tangutica

Half-ripe Cuttings

D. acutiloba
D. arbuscula
D. blagayana
D. × burkwoodii
D. cneorum
C. collina
D. genkwa
D. petraea
D. retusa
D. sericea
D. tangutica

One member reported success by splitting the stems and using NAA instead of IBA.

Many species came readily from cuttings and an instance was quoted of a piece of *D. blagayana* being accidentally broken-off during winter and being successfully rooted merely by being pushed into the garden soil.

ROOT CUTTINGS

This is frequently quoted as being a possible method for *D. mezerum* and types and *D. genkwa*. Arthur Carter reported failure and emphasized the natural reluctance to disturb established plants to obtain suitable propagation material. Pot-grown plants were more convenient and generally pieces of root, 2 to 3 cm in length were inserted either vertically or horizontally in sandy compost in December. Not always is success achieved but if two or three shoots emerged from one shoot, it might be worthwhile removing one or two, to try to root the juvenile cuttings.

One member suggested trying inserting the root cuttings at an angle of 45°.

LEAF-BUD CUTTINGS

D. retusa and *D. tangutica* have been recorded as being successfully propagated by leaf-bud cuttings in July to September in a cold-frame. Rooting had occurred by spring but the plants were slower to grow to a saleable size.

GRAFTING

Some daphnes do not regularly produce seed or are difficult to root from cuttings. These are usually grafted and frequently better growth is produced than when the plants have their own root systems. *Daphne petraea* 'Grandiflora' tends to flower at a younger stage when grafted.

The main disadvantage is the increased risk of perpetuating virus when grafting compared with seed propagation.

Rootstocks.

D. mezereum	Widely used but not everyone is happy about its use as a rootstock for evergreen types. Some think they become semi-evergreen.
D. acutiloba	Thought by some not to be reliably hardy.
D. longilobata	Hardy
D. laureola	Evergreen
D. pontica	Evergreen
D. giraldii	Halda states this is better as a rootstock for *D. arbuscula* than *D. alpina*, *D. laureola* and *D. mezereum*.

Grafting method. Grafting seems to have been carried out at most times of the year but probably December to February is favored.

Commercially, stocks of two to three years of age, in good health are used. Scion length varies according to the species and availability but one to two-year old pieces 2.5 to 7 cm long are often used. Side and wedge grafts are employed, tied-in and plunged in a closed propagating case.

For the amateur, less sophisticated methods are successful and Arthur Carter described the simple system he adopts in his small, unheated greenhouse. April to May seemed a good time and for thin-wooded types such as *D. petraea* or *D. genkwa*. Young seedlings of *D. mezereum* one year old or less, were topped and slit down the middle of the hypocotyl. A wedge-shaped scion was then inserted, sealed with Blu-tac and then placed in a shaded plastic covered propagating tray. For anything older or sturdier, the grafted rootstock has its pot enclosed in a polythene bag and the scion is tied in. For vigorously growing subjects, Blu-tac does not hold the joint sufficiently and ugly callus develops.

Root grafts. Brief mention was made of root-grafting where pieces of root 5 to 7 cm long were wedge-grafted with the scion species and plunged in peat.