

DISCUSSION GROUP REPORTS

Group D.

Azalea Production

CHAIRMAN — ARTHUR R. CARTER

The Chairman was hopeful that the subject could be discussed under three headings: (a) stock plants, (b) propagation methods, (c) overwintering. The contributions from members were so plentiful that the discussion was not completed. However, this summary contains, in addition to the points brought out in discussion, the chairman's notes which covered all three sections. The whole session was a joint effort and no individual contributions are identified.

STOCK PLANTS

A more uniform crop will result if sufficient cutting material is available to produce a reasonable size batch at any one time.

The "age" of the material is important. Stock plants should be "young". Taking cuttings retains juvenility. Three year old stock plants pretty well stripped every year for five years produced about 250 cuttings per plant over the propagation season. It was suggested that if 30 cuttings were available from a small plant, 5 shoots should be left intact. Flower buds were produced and then a flush of useful growth developed.

Stocks plants under protective cover produce earlier cuttings.

On the continent, stock plants in beds have the flower buds removed in February and are covered with plastic or glass at the end of March. An article by David Leach suggests bringing stock plants into a glasshouse before any autumn foliage change occurs. Give minimum night temperature of 60° F. Use 75 watt internal reflector bulbs at 3 ft. centres, 30 inches above tips of plants. Either use continuous lighting from dusk till dawn or give 5 to 15 seconds every minute. By late November, first crop of cuttings is ready. Six weeks later a second batch is available. Early cuttings can be given lights and the tops can then be taken out for rooting.

Other work suggests that increasing the day length appears to increase shoot length, but has no effect on shoot number, or can even reduce it.

Work at Kinsealy suggests cuttings from plants under glass at 75° to 80° F are ready for collection about mid-April. This is two weeks earlier than those under plastic and four weeks earlier than those outside.

Martin Hall successfully uses polythene tunnels for advancing cutting material. The mother plants are not covered during autumn and winter.

Number of Cuttings. This varies according to cultivar. Kinsealy quote 'Gold Dust' as giving up to 300 cuttings from two 4 year old bushes. Mr. Thorburn, prior to the meeting, gave the chairman figures showing 25,000 cuttings from 380 six-year old plants of Exbury azaleas. Cultivars, Ballerina, Cecile and Exbury White were said to be shy producers and Balzac, relatively shy.

PROPAGATION METHODS

Type of Cutting. Usually soft-wood 6 to 9 cms long. Generally the earlier the cuttings are taken, the better the chances of successfully overwintering them.

Work at the University of Minnesota showed that semi-soft, fully expanded cuttings taken in the late stage of growth rooted better than succulent cuttings still elongating. Also, cuttings with a hardwood base, but with a still-expanding terminal growth in early spring, rooted as well or better than softwood cuttings.

In Volume 17, No 1, *The Plant Propagator*, February 1971, was an account of work carried out by two exchange students at Jim Wells Nursery. Here cuttings were 7.5 cm long and either buttersoft, without a terminal bud having been formed, or very hard with a terminal bud. The hard cuttings had better roots and a higher percentage rooted.

During discussion it was stated that cuttings rooted after mid-July formed flower buds. One member described a suitable time for taking cuttings as when four fully unfolded leaves were present and no terminal bud had formed. It was stated that rooting directly into pots eased the overwintering problem. Another view expressed was that single cuttings in peat pots were not as good as rooting in peat in boxes.

Cultivar response. Work at Kinsealy gave the following results:

At a period of nine weeks from insertion on 5th June:

'Berryrose', 'Golden Girl' and 'Ballerina' gave	.
	50% or fewer rooted.
'Strawberry Ice', 'Klondyke' and 'Cecile'	.
	62 — 66% rooted
'Gibraltar', 'Kathleen' and 'Gold Dust'	.
	87 — 100% rooted.

However, timing is also important for some cultivars, as cuttings inserted earlier gave poorer results: for 'Strawberry Ice' (24%) and 'Cecile' (33%), but 'Klondyke' (75%) and 'Kathleen' (87%) responded well.

Martin Robinson, just over a year ago, listed the following as likely to root without much difficulty:

Knaphill and Exbury 'Berryrose', 'White Swan', 'Persil', 'Gallipoli', 'Marion Merriman', 'Toucan', 'Gibraltar', 'Klondyke' and 'Harvest Moon'.

R. x Kosterianum (*R. japonicum* x *R. molle*) — (often known as *Mollis/sinensis* hybrids) 'Kosters' Brilliant Red', 'Baron Edmond de Rothschild', 'Koningin Emma' (Queen Emma'), 'Lemonara', 'Dr. M. Oosthoek', 'Mrs. Peter Koster', 'Adriaan Koster', 'Directeur Moerlands' and 'T. J. Seidel'.

Wounding. Whenever you take a cutting you are bound to wound the tissue but, for the purpose of this discussion, wounding implies the removal of some additional tissue. Dutch recommendations include wounding for *Rhododendron luteum* (*A. pontica*) hybrids but not for *R. (A.) indicum*, *R. x Kosterianum* or *R. (A.) obtusum* hybrids.

In the trial at Jim Wells' nursery mentioned under "Type of Cutting," wounding had no significant effect on the rooting of 'White Swan' and 'Firefly'.

Kinsealy work also indicates that there is no significant advantage derived from wounding. Roots are formed along the stem.

Treatment with root promoting substances. Fashions vary. Some propagators used a powder dip on most subjects. Some members dipped all azalea cultivars in IBA, 0.3 powder (Seradix 2). Increased rooting in cultivars, Balzac, Ballerina, Golden Girl and Strawberry Ice was obtained by using IBA 0.8% powder (Seradix 3).

Work at Boskoop suggests no growth substance is necessary. In a trial in U S A using cv. Red Wing, untreated cuttings yielded the highest rooting score. Commercial rooting compounds containing a mixture of NAA, NAAA and IBA gave poorest results. A herbicide 2,4,5-T, was also used. At 40 ppm it gave the earliest rooting, but in other work it gave poor results and seriously reduced the take. Cultivar, Coral Bells, rooted less easily and responded to IBA

Fungicidal dip. Various materials have been used. Captan at 5 to 15% has been quoted and benomyl also has its champions. In Holland, nurseries visited by Miss Helliard and Miss Scott all used benomyl as a dip, prior to insertion, though one grower found some varieties were liable to scorch and were now sprayed when rooting started. This seemed rather late.

At Brooksby Hall, dipping in captan solution was better than dipping in water. Benomyl was better in trials in U.S.A. as a 5% dip than as a drench (add 9 parts of 60% w.p. benomyl to 100 parts rooting powder). Members were generally agreed that some fungicidal dip was useful and the preference was for benomyl (Benlate).

Rooting medium. It should be well drained. Adding fine sand

can fill in spaces between peat particles and reduce drainage. It should be acidic, a range of pH 4.5 to 5.0 is often quoted. Calcium is important and ground limestone should be added to very acid peat. In Holland, 2 to 3 kg per cubic metre is added to peat with a pH of 3-7. Frequent applications of hard water can alter pH. Use of thin plastic film plus shade should be considered as an alternative to mist where water is very hard. Kinsealy found peat best overall rooting medium, although peat, sand, 2:1, gave quicker rooting. A mixture of 40% polystyrene granules, 40% loamalite, 10% fused mica and 10% peat was reported to be giving a higher rooting percentage and a compact root system.

Lighting during rooting. This is unlikely to be much use during long summer days, but earlier or later in the year it would be worth trying.

OVERWINTERING

Problems arise with late struck cuttings, particularly with deciduous azaleas. Various methods of reducing losses have been suggested.

- (a) avoid disturbing the rooted cuttings until spring,
- (b) Storage in cold store until spring,
- (c) extending day-length by lighting 60 watt bulbs, 4 ft apart, 30 in. above cuttings to give 16 to 18 hours total day-length is useful. It must be started early (end July) before onset of dormancy or leaf fall. Continue treatment until leaves colour or fade, then stop. It can produce somewhat leggy cuttings and it would be interesting to see the effect of a pinch, provided it was early enough for extension growth to be produced.