VOICES FROM THE PAST

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For several years, I have had a growing feeling that we are ignoring our heritage in IPPS. We do a reasonably good job of remembering and honoring long-time colleagues and former colleagues, as it should be, but we do not do so well in remembering the skills and wisdom that they have contributed to us. When I hear a question addressed that was answered 20 years ago, and perhaps a few more times since, I sometimes wonder why the speaker is not aware of the earlier answer. The reason seems simple: we don't often enough read our Society's back publications.

When I told Kathy Freeland that I was considering saying something on the topic of "re-inventing the wheel," she was kind enough to send me a sampling of topics that some of you requested for this year's program. From her list I selected three plant genera about which people had asked for more information: *Daphne, Kalmia,* and *Sciadopitys.* Then I checked our Proceedings for the past 35 years to see what you and others have reported on propagation of these plants since our Society had its start. Some of this information I now pass on to you.

Daphne. Much of the information on *Daphne* in the IPPS Proceedings relates to *D. odora* and other evergreen species and comes from meetings of the Great Britain and Ireland (G.B.&I.) Region. My guess is that the person requesting more information was more interested in the deciduous daphnes that more of us in North America can grow, so I will emphasize them.

In 1953, Leslie Hancock in Ontario, Canada, reported variable rooting of *D. cneorum,* averaging 50 to 75% as compared with 100% for other *Daphne* species. A decade later (1964), Bruce Briggs reported success with *D. cneorum* 'Ruby Glow', using semi-hardwood cuttings (August to September in Washington state), in sharp sand, well drained. Cuttings from plants grown dry rooted better than ones from lush plants. G. P. Chandler reported at the G.B.&I. Regional Meeting in 1969, that stock plants of *D. cneorum* were better left in open ground than potted in the greenhouse for flushing of vigorous growth, as he had found worked well for *D.* × *burkwoodii.* He used semi-mature cuttings (late June or July in Dorset, England) in sand:peat moss (2:1, v/v), closely spaced to conserve moisture, and watered thoroughly at first and not again until they had rooted (6 to 8 weeks), but shaded on bright days meanwhile.

Propagators seem to agree that *D.* × *burkwoodii* 'Somerset' is

one of the easiest daphnes to propagate by cuttings—perhaps one reason for its great popularity in the 1960's. At a discussion at the G.B.&I. Regional Meeting in 1979, there was little agreement as to whether soft or half-ripe cuttings root more easily, for any *Daphne* species.

Summarizing, the limited evidence presented thus far suggests two things. First, a propagator starting with cutting propagation of *Daphne* might try semi-mature cuttings from healthy but not overly vigorous stock plants, taken as early in summer as such wood is available, perhaps treating with a hormone of moderate strength (such as 0.3 to 0.8% IBA in talc) as a precaution rather than necessity, and using sharp sand for maximum aeration. Watering might well be held to a minimum after an initial soaking, assuming the cuttings will be shaded from direct sun.

Second, the need for more information seems clear, especially the need for careful experimentation with techniques that can be compared in different climatic regions.

Kalmia. Successful micropropagation of *K. latifolia,* first reported to this Society in 1980 by Gregory Lloyd and Brent McCown of the University of Wisconsin, created a stir of excitement and paved the way to commercial propagation of superior cultivars. The story up until then had been one of frustration and spotty success. Yet there were individuals who had been successfully propagating mountain laurel earlier. In 1963, and again in 1967, Bill Curtis told of the success of an Oregon neighbor who managed 75 to 80% rooting of white-flowering forms and 50% rooting of pink-flowering forms year after year, with bottom heat under a sand and peat rooting medium and no added hormone, starting in March.

Bruce Briggs in 1964 described *K. latifolia* 'Ostbo Red' (then called "Ostbo #5") as "difficult to root," but not impossible, when semi-hardwood cuttings were stuck in sand:peat (2:3, v/v) in a closed case. In 1966, Al Fordham reported success in rooting cuttings of one of the Dexter selections of *K. latifolia,* with best results using a solution of 1000 ppm each of IBA and NAA, as a quick dip. By 1977, he was able to report success in 30 rooting trials over a 10-year period, with at least 80% rooting in 23 of the 30 trials and at least 90% in 14 trials.

In 1967, Sid Waxman included *K. latifolia* in a study of cutting propagation under fluorescent light. At intensities of 160 to 180 ft-c he achieved 60% rooting of Richard Jayne's, clone #137, which he (Sid) described as "notoriously difficult to root." The general level of desperation at that time is illustrated by Brian Humphrey's answer to a question on cutting propagation of a *K. latifolia* clone at the 1968 G.B.&I. Regional Meeting. He said, "I have tried with disastrous results. It is better propagated by grafting . . . on *Kalmia* seedlings". Likewise, John E. Eichelser, at the 1972 Western Regional Meeting quoted a fellow propagator in the Pacific North-

west on 'Ostbo Red': "useless to try to root it as it has been tried and could not be done". John himself was more successful, obtaining about 50% rooting the patient way, taking cuttings monthly from June to January. January cuttings, following a few freezes, rooted 25 to 30% by late May. Clean callused cuttings re-stuck eventually doubled the final count.

In 1971, 1976, and 1981, Dick Jaynes gave progress reports on his *Kalmia* breeding work, also reviewing progress in propagation. He noted that there was widespread disagreement on timing of cutting propagation, with recommendations varying from March to June, July, and August to December. He also stressed the importance of age of stock plant. In one comparison, he found cuttings from 1-year seedlings rooted 89%, those from 2-year seedlings 33%, and from 3-year seedlings 21%, while cuttings from 1 to 3-year grafts and rooted cuttings rooted 60%. In another test with his clone #137, cuttings from 1-year rooted cuttings rooted 94%, from 8-year-old rooted cuttings, 31%, and from 15-year-old original plants, 30%. In 1981, he noted that great gains had been made, with more progress needed, and pointed out the dramatic change made by the current success in commercial tissue culture propagation of *K. latifolia*.

Now that tissue culture is the mode, is the research done before tissue culture just so much wasted effort? I don't think so. The understanding of rooting responses and juvenility that emerges from those results is already finding application in tissue culture, and may become even more important as problems continue to emerge in tissue culture that require understanding of the physiology of the whole plant for their solution.

Sciadopitys. This striking conifer is a good example of how a plant considered difficult to root sometimes can progress to the status of being commercially feasible through uncovering a few simple facts about its physiology. As early as 1960, Sid Waxman pointed out that readiness of *S. verticillata* to root well depends on it's having received enough chilling to break internal dormancy. Cuttings made in late winter rooted in high percentages. This was quickly confirmed by Bill Flemer III (1961), and Jerry Verkade (1963). Sid pointed out that *Sciadopitys* behaves just the opposite of *Taxus*, which is best rooted earlier so that dormancy holds back bud-break until after roots have formed.

In 1978, Sid showed evidence of large clonal differences in success of rooting, and hypothesized that large resin discharge from cuttings of certain clones, possibly blocking intake of water or oxygen, might account for clonal differences. Soaking cuttings in dilute solutions of IBA had invariably produced better rooting than quick-dip or powder treatments. Soaking of cuttings in water before application of IBA allowed resin exuding from cuttings to be washed into the soaking water. Rooting percentages were nearly

twice as great for soaked cuttings as for unsoaked. In this way the persistence and ingenuity of one propagator, encouraged and assisted by others, has made cutting propagation of *Sciadopitys* commercially feasible.

AVAILABILITY OF INFORMATION

Looking into all this took a little time but it was not a difficult effort for me. Why? I have several advantages. First, I am old enough to have attended my first IPPS meeting in 1961, so I have all but the first 10 years of the Proceedings (and one missing later volume) in my personal library, along with our excellent 30 volume Index. I also have the advantage of a major university library at my fingertips (even though they are missing five volumes!). Many other members have equally easy access to the Proceedings. But by no means all.

Many of our members have been with us for only a few years, and so have been exposed to only a few meetings, and have received only a few volumes of Proceedings. Probably many do not have access to earlier back volumes of the Proceedings, not to mention the many additional contributions that have appeared in *The Plant Propagator* over the years.

There is no way new generations of plant propagators can enjoy the same personal associations that have infused us with enthusiasm. They will find their own inspiration. But there are things we all can do to avoid losing the wisdom of our senior associates as we eventually lose their physical presence. More things than I can think of, probably, but I do have a few suggestions.

First, let's be sure the writings of our members are preserved. We have done that reasonably well in our bound *Proceedings*, but what about the reports of original research that have appeared in *The Plant Propagator*?

Next, how can we make these writings more accessible? Our Purdue University libraries do not have a complete set of *The Plant Propagator* and I suspect many other libraries do not have, either. Even if one had access to all issues, a serious search for any specific information therein would be very time consuming. Shouldn't we be thinking seriously of preparing an index for *The Plant Propagator* similar to the one we already have for volumes 1–30 of the Proceedings, and/or reprints of original research reports from *The Plant Propagator* for distribution to members and libraries. What better time to consider such projects than now, at the end of the of *The Plant Propagator* in its original form?

Finally let us resolve, by reading those back publications that we can find, to listen to the voices from our past as we prepare to find new information. In so doing, we can learn from our predecessors as we pay them the greatest possible tribute: listening to their words.