business on Long Island and together they relocated and expanded to their present location in Neshanic Station in North Central New Jersey. Peter joined the Eastern Region of the IPPS in 1955. immediately became very active in the Society and was most anxious to share his knowledge with fellow members Pete has presented several papers at Society meetings and actively participates in all our annual meetings with his questions and answers. He has been both Eastern Region and International President in our Society

Peter has been active in his state nurseryman's association since 1947 and has served as its President. He has served on the Board of Managers at the College of Agriculture and Environmental Science for 9 years and also served as President He is a member of the State Board of Agriculture for New Jersey and served as its Vice-President in 1980-81. In addition he has served as Director of the New Jersey Farm Bureau for several years, and also has been active in the local school board, Industrial Commission, County Board of Agriculture, Farmland Preservation Committee and his church as a teacher. leader, disciple and witness.

Peter is presently managing the family-owned business primarily engaged in plant propagation and container culture of the more rare and unusual plant genera, species, and cultivars used in plant beautification and environmental enhancement. His business is also heavily engage in creation. sales and distribution of bonsai plants

It is indeed an honor and a privilege to present to such a distinguished man our Society's highest award: the Award of Merit.

Thursday Morning, December 10, 1981

The Thursday morning session convened at 8:10 a.m. with William E Snyder serving as moderator.

PROPAGATION OF SHADE TREES BY SOFTWOOD CUTTINGS

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The specific objectives of this investigation (a study initiated in 1979) include (1) how many different tree species can

be commercially propagated by softwood cuttings and when; (2) encouraging development of cultivars adapted to specific regions, e.g Great Lakes cultivars; and (3) stimulate local nurserymen to propagate regional cultivars or stimulating the establishment of local propagation firms with the above goals (1).

MATERIALS AND METHODS

Cuttings of *Acer campestre*, *A. platanoides*, *A. platanoides* 'Schwedleri,' *A. saccharum* subsp. *nigrum*, *Malus* 'Snowdrift,' *M. tschonskii*, *M.* 'Mary Potter,' *Aesculus hippocastanum*, *Quercus alba* and *Q palustris* were taken essentially at two-week intervals during 1980 and/or 1981. The various cuttings were taken and disinfected in a sodium hypochlorite solution mixed at a 1 to 20 ratio Cuttings were submersed in the above solution for 20 minutes and rinsed in water. The cuttings were then dipped in a powder mixture of 3.8% Benlate and Hormodin 3, and stuck in a medium containing 50% sphagnum peat moss and perlite by volume. The mist was set to come on for five seconds every ten minutes (1). Six weeks after sticking the cuttings were removed and evaluated for number decayed, callused, or rooted.

RESULTS AND DISCUSSION

The results (Tables 1 and 2) indicate softwood cuttings of *Acer campestre*, *A. platanoides*, *A. saccharum* subsp. *nigrum*, *Malus* 'Snowdrift,' *M.* 'Mary Potter,' and *A. hippocastanum* could be rooted in commercially acceptable percentages (75% minimum) at varying times from late May through mid-summer. The data indicate that *A. hippocastanum* could most easily be rooted in commercially acceptable percentages during late May through June. After that point, rooting percentages dropped dramatically. *A. campestre* rooted through June and July, again in commercially accepted percentages with mid-June being optimal. *A. platanoides* did not root in early July or late August but showed acceptable rooting percentages during early through mid-July. *A. saccharum* subsp. *nigrum* rooted 50% or greater mid-June through mid-July.

Table 1 Propagation response of some shade trees (1980)

Species and Dates Stuck	Number of cuttings		
	Stuck	Callused	Rooted
Acer campestre			
May 22	25	12	12
June 5	25	22	20
June 18	25	23	23
July 1	25	20	17
July 17	25	19	19

August 5	25	17	17
August 28	25	6	6
Acer platanoides			
June 10	25	20	12
June 17	25	5	4
July 2	25	21	20
July 17	25	20	20
August 5	25	12	12
August 28	25	6	6
Acer platanoides 'Schwedleri'			
June 5	25	23	12
June 18	25	17	14
July 1	25	12	10
July 17	25	16	15
August 5	25	6	6
August 28	25	6	6
Acer saccharum subsp *nigrum*			
May 22	25	0	0
June 10	25	15	15
July 3	25	15	14
July 15	25	15	13
July 29	25	6	5
August 20	25	2	1
September 9	25	0	0
Malus 'Snowdrift'			
May 30	25	8	8
June 13	25	23	23
June 26	25	17	16
July 8	25	25	25
July 23	25	24	24
August 12	25	25	22
September 4	25	8	7
Malus tschonski			
May 30	25	4	4
June 13	25	12	5
June 26	25	6	0
July 8	25	9	0
July 23	25	20	0
August 12	25	14	0
Aesculus hippocastanum			
May 23	25	16	16
June 6	25	25	18
June 25	25	11	11
July 9	25	25	18
July 23	25	17	12
August 12	25	0	0
Quercus macrocarpa			
June 10	25	5	4
July 3	25	1	0
July 15	25	3	1
July 29	25	14	0
August 20	25	0	0
September 9	25	1	0
Quercus palustris			
May 30	25	0	0
June 17	25	0	0
July 3	25	14	7
July 15	25	9	6

July 29	25	1	1
August 20	25	1	0
September 9	25	6	0

M 'Snowdrift' and *M* 'Mary Potter' rooted acceptably for a period of time from mid-June through the entire month of July. They, in fact, were so "easy to root," that one should expect nothing less than 90% rooting. Conversely, *M. tschonskii* showed only a slight tendency to root and, in fact, the above-mentioned propagation technique is not acceptable for commercial production.

The oaks were a difficult group, with *Quercus palustris*, at this point, showing the greatest promise for cuttings taken in early July. *Q. macrocarpa* and *Q. alba*, did not root. It was felt that the oak group did not root because of poor aeration in the media which encouraged decay In the future, one should consider sticking cuttings of oak in a medium of 100% perlite or quartz sand.

Little leaf linden (*Tilia cordata* 'Greenspire') showed a tendency to root when taken during late June. It was hypothesized that the decreased rooting in 1981 was the result of a slight change in the media peat moss (peat source) which seemed to decrease aeration and, therefore, increase the frequency of basal rot.

Table 2. *Propagation response of some shade trees* (1981)

	Number of cuttings		
Species and Dates Stuck	Stuck	Callused	Rooted
Acer campestre			
June 12	50	42	32
June 26	50	34	30
July 10	50	16	13
July 24	50	31	31
Malus 'Snowdrift'			
June 26	50	47	43
July 10	50	48	48
July 24	50	49	48
Malus 'Mary Potter'			
June 26	50	50	50
July 10	50	50	50
Tilia cordata 'Greenspire'			
June 24	50	16	16
July 8	50	9	9
July 23	50	9	8
Quercus alba			
July 30	50	4	0
August 13	50	3	0

A. campestre, *A. platanoides*, *A. rubrum*, *M.* 'Snowdrift,' and *M* 'Mary Potter' can be propagated in commercially acceptable percentages (in excess of 75%), depending on the tree species. Propagation of trees by softwood cuttings is a viable

concept when cuttings are taken and stuck between June to July, depending on species types. Cuttings of some trees develop basal rot when taken and stuck too early, e.g. *A. campestre*, *A. platanoides*, and *A. rubrum*. Therefore, cuttings of these trees should not be taken until after the period of rapid elongation is complete. Further, it should be stressed that porous, well-aerated media combined with the correct timing are two important factors, resulting in increased number of shade trees that can be propagated by softwood cuttage. This concept of propagation by cuttage of regionally adapted cultivars should provide a stimulus for the entire nursery industry, resulting in trees that are propagated and grown on their own roots with no graft incompatibility Further, they can be selected for environmental tolerances, e.g. tolerant to air pollutants, disease and insect resistance

LITERATURE CITED

1 Chapman, D J 1979 Propagation of *Acer campestre*, *A platanoides*, *A rubrum*, and *A ginnala* by cuttings Proc Int Plant Prop Soc 29 345-347

HUGH STEAVENSON: What do we know about the root structure as the trees get older?

DOUGLAS CHAPMAN: We have some 3 year old plants at Dow Gardens that look very good. The cuttings do not root from just one location but multiple sites.

WILLIAM WOLFF. I might be able to shed some light on the subject from another *Acer* species. I had a test comparing rooted cuttings vs. grafted 'Bloodgood' The trees were grown to a 6 to 8 ft size and we found in every case that we could not tell a difference in root structure.

ED MEZITT: We have also grown Japanese maples from cuttings and they have good root systems. We have done *A. rubrum* from cuttings but are having an overwintering problem

DON SHADOW: Was the *A. campestre* from a specific cultivar?

DOUGLAS CHAPMAN. No. From seedling trees 8 to 10 ft in height. The cuttings were taken throughout the plant. This was one of the more dependable species for rooting. Increased photoperiod can keep it growing.