

# SCHMIDT AND SON: PROPAGATORS OF DECIDUOUS TREES

The events and happenings of the past 32 years that formed and shaped J. Frank Schmidt and Son Company of Boring, Oregon are demonstrative of what has and is happening in the bare root shade and flowering tree industry.

The forces and factors were climatic, human and economic. The company grew under the inspiration and directions of J. Frank Schmidt, Jr., the company's president. As in the case of most Northwest nurseries, it began as a family farm-nursery. Each member of the family, three sons and a daughter, branched out into a different aspect of the industry.

Frank, Jr., took the direction of ultra-specialized, mass produced

nursery stock. Ultra-specialization means propagating and growing one line of nursery stock, bare root deciduous shade and flowering trees. Such concentration of effort results in the production of a line of trees that represents a careful balance between conservatism with proven trees and forward thinking with tested new selections. Schmidt states, "By the mid-1940's it was apparent that asexual propagation of cultivars was the only way to assure a uniform, predictable product, rather than depending on seed-produced trees that are like people, each somewhat of an individual."

Mass production, strenuous grading standards and continuous trial and error experimentation set the

**Three quarters** of Schmidt's annual crop is branched two- and three-year-old trees up to two-in. in caliper.



stage for a continuous expansion philosophy. Today the nursery continues to plant approximately 10% more seedlings per year.

"Conditions in the Country were right for this philosophy," comments Schmidt. "Ample production each year beyond experienced sales levels always allowed us to have trees for sale during mid-winter and spring when the specimen tree grower and the retailer discovered the market was going to be stronger than anticipated." As a result, the company's sales graph over the years has been a continuous upswing. "This has permitted us to reinvest in people, equipment, land and facilities," Schmidt states. "It is my belief that a company's purpose for existence is to provide a group of people an enjoyable means of livelihood as they provide for the needs of the customer. The president's main job is to see that the companies policies are maintained in a healthy economic balance."

This spring the company delivered 600,000 trees to customers in 36 northern states and to the Provinces of Canada. The past few years sales increases have averaged around 30 percent. One-third of the crop was sold as one-year whips to specimen treegrowers and two-thirds as branched two and three-year-old trees to retailers and landscapers. Sales Manager, Archie Whiteford, comments, "Each year we seem to sell more trees during the spring months, filling those last minutes needs not anticipated by the customer. Having extra trees dug and held in our new 325,000 ft. cooler is going to increase these sales even more in future years."

"Other factors of the industry have contributed to the growth of this Oregon nursery" states Norbert Kinen, business manager. "Previously, most of the Oregon nursery production was sold both through Oregon-based wholesale brokers and re-wholesaler firms scattered throughout the country. Communication and transportation have shortened the distance between the grower and the ultimate customer, reducing costs."

The temperature-controlled tractor-trailer truck has allowed rapid delivery with less handling of the trees. Nursery Trade Shows, ten of which the nursery participates in, have placed the grower and their customers together. "It is one of our major ways to gather feed-back on our trees and address ourselves to

special needs," states Frank Schmidt III, vice-president and production manager. "Customized canopy trees were introduced last year as a result of that communication."

Asked about the future, Frank Jr. displays a confidence in a continued expansion of the shade and flowering tree demand. Quality trees and a wider selection of materials will be part of that demand. The growing interest in environmental quality and energy consciousness accounts for the motivation. He expects the national advertising program being developed by the newly created Nursery Marketing Council will stimulate a momentum that will surprise many. "The question is," he says, "are we going to be prepared when it happens."

Trees are dug, graded, and stored beginning in late October through January and shipped beginning late in February, through March and into April. 133 cultivars and varieties are offered in the company catalog of which 33 are patented trees. Slightly over a million seedlings are being planted this spring.

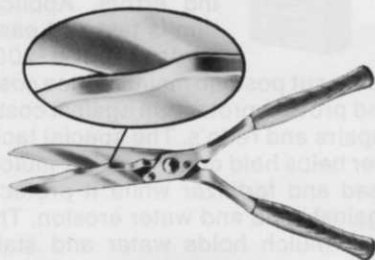
Principal propagating techniques are by budding on a root stock, rooted cuttings. Some are strictly from seed with no asexual propagation and some are grafted. The company produces its own understock in its own seedling department. Seedlings are held in the seedling beds for one to two years, then planted out in fields for one season, at the end of which they are budded. Late the following winter the seedlings are cut off just above the bud of the cultivar and above a good active bud of those that will be grown on their own root. As growth begins in the spring from the selected bud, a device called Grow Straight is placed 1/4-inch away to direct the new growth straight upward avoiding a "dog leg" in the tree stem or trunk. After one season of growth from the selected bud, the tree is termed to be a one-year-old tree having a three to four-year-old root. Approximately one-third of each year's production is sold as one year whips and the remaining two-thirds is sold as two to four-year-old branched trees ranging in size from five to 15-ft. tall and an inch to two inches in caliper.

All of the nursery's production is sold wholesale to customers in hardiness zones two to six throughout the U.S. If you drew a line from Northern California through South-



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ern Colorado into Oklahoma, East through Missouri on to Virginia you would establish the Southern boundary of the company's customers. Customers include growers in their local areas for balled and burlapped specimen trees, re-wholesalers and propagating nurseries who resell to retailers, and garden centers and landscape contractors who sell to the commercial and domestic consumer either bare root or by containerizing until the trees are established.

The company holds patents on five trees and the Grow Straight which it produces and sells. Schmidt has established with its employees a joint partnership, a specimen tree nursery called Northwest Shade Trees, Inc. It produces balled and burlapped specimen shade and flowering trees for the West and Northwest U.S.

There are 60 full-time employees, and up to 130 workers are added seasonally. Professional budders are employed, mainly Mexican Nationals who have work permits for this specialized work.

Schmidt spent approximately \$100,000 on new equipment last year. It owns 24 tractors of various sizes for work ranging from plowing, discing and subsoiling to cultivating between rows of trees. Four customized diggers are used during the digging operation which are track machine elevated to go over the top of trees, a U-blade for cutting the roots, and hydraulic shakers to remove the soil. All trees are handled on pallets conveyed on trailers and moved by forklifts.

Much of the equipment is customized after purchase for special tasks such as snow blowers for opening up sawdust trenches for winter storage and a compressor rig and boom to convey workers over each row to operate pneumatic shears for stubbing the seedlings down to the selected bud. Other customizing work is necessary to strengthen or adapt machinery such as planters, cultivators and disks for cultivation between the rows. The shop foreman is hired both for maintenance of equipment as well as customizing equipment. There are other types of

specialized equipment produced for the nursery industry like tree tag printing machines and tree bundling machines.

Despite the machinery, there is still much hand labor in a nursery of this type which increases the labor cost and the cost of trees. Industry has not evidently found it profitable to address themselves to the needs of this type of nursery operation in designing and manufacturing labor saving equipment. As a result, companies are left to their own resources.

The process, therefore, of merchandising the shade tree industry has been slow. Costs could be cut considerably if there was a means of conveying trees from behind the digger onto pallets without damaging them. Conveying systems for grading trees and handling then in the warehouse in preparation for storage and shipment would also reduce costs a great deal.

The nursery has two acres of humidified warehouses for short term storage and processing of trees, six acres of outdoor sawdust bins for

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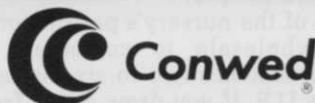


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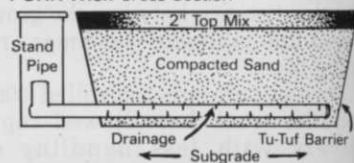
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tree storage, and 475,000 cubic feet of cold storage for seedling and tree storage.

Nearly all irrigation is done by sprinklers, the Rainbird type. The nursery has eleven wells and three ponds. Normally in the area, trees will consume 3/10 of an inch of moisture per day. The nursery has a system of moisture plugs which electronically monitor the moisture content of the soil at various depths. The moisture plugs indicate when to irrigate and how much water to sprinkle on the field to keep the moisture content above 50 percent of field capacity.

Generally, four herbicides are used for special purposes. Simazine, enide and paraquat are used to maintain control of weeds down the rows. Roundup is used to clean a field before replanting. A wide variety of insecticides is used depending upon the type of insect that is being combatted.

Western Oregon soil is acid. Before planting, approximately every five years, up to three tons of lime must be worked into the soil one year before, to give it time to react.

In our climate, trees do not do well unless they have at least 100 pounds of each of the three major elements per acre. There is no standard fertilization practice in the sense that all fertilizing is done based upon either soil or tissue analysis. Fertilization is done just before planting a field followed by both ground and air applications according to season, the variety of the trees, and soil and tissue analysis. Aerial spraying is necessary in late winter when the fields are too wet for standard ground equipment.

Between crops, soil is built by one year of green cropping to develop humus in the soil and one year of summer fallow to clean the field of any weeds. Weeds are a concern not for the competition that they might

give to the trees, but the fact that they become hosts to various types of insects.

Advertising is done in two major horticultural publications in the United States and one major publication in Canada. A second source of advertising is attendance and display at the major trade shows and conventions throughout the sales area. The company attends ten such shows each year. Schmidt has many visitors and at those times when there are special meetings in this area an effort is made to bring visitors to the nursery. For instance, during the A.A.N. Convention in Seattle last year, visitors were brought from Seattle to Portland and given a tour of the nursery's fields and facilities.

The company also publishes a monthly newsletter to inform the customer about various factors of weather, cultural practices, and the outcome for the upcoming crop. Further, it serves to acquaint the



**A specialized blower** used to weed between the trees and to remove soil build-up around the stems of the seedlings in preparation for the budders.

prospective customer with the company. Beginning in September, a stock available list is published once each month, until January when two stock available lists are published each month until late spring.

Until recently visiting customers was done by staff members from the home office periodically through the summer. Now regional sales representatives are being contracted who will visit each customer periodically.

There has been a gradual evolution from complete use of rail car to tractor-trailer truck. This has permitted more rapid transportation, the customer to get last minute needs, to-the-door delivery, and less of handling the trees. All shipping is done by temperature-controlled trucks contracted with independent carriers through a shipping brokerage firm.

There are several problems, or challenges, to be overcome to keep a healthy shade and flowering tree industry. Labor costs, both direct and indirect, plus inflation are causing sharp rises in the cost of production which must be passed on to the wholesale customer and eventually to the consumer. The minimum wage law is not only effecting the lower portion of the wage scale, but all the way up the line. Indirect costs such as workman's compensation insurance and now the Oregon agriculture unemployment tax have increased our labor costs between 15 and 20%. Furthermore, the agriculture labor supply appears to be dropping as we are expanding.

Absenteeism and turnover are resulting in the need for more supervisory personnel and training time. This fact, coupled with the lack of equipment engineered for the nursery industry, makes us very dependent on a large labor supply. Therefore, a second problem, or challenge, is the development of equipment, either by the manufacturers or by the nurseries themselves.

The third challenge is the need for continuous study to select new cultivars for asexual propagation. There are presently several standard plant materials with undesirable qualities such as disease tendencies and undesirable growth characteristics. Continuous study should go on to provide a wider selection of deciduous plant materials.

The consumer is awakening to his broad range of plant needs. Much time and effort must be expended

to provide the consumer with reliable information about the many cultivars that are presently being produced. There is need for a broad range study throughout the United States to observe the cultivars which have now been planted under various climatic conditions. To date, standard manuals have not been published containing this information. Studies by Dr. Phillip Kozel at Ohio State University, are recording the desirability of many cultivars now on the market for street and home planting. Similar studies need to be made in many areas. Another important study is the one being carried out by Dr. Lester Nichols at Pennsylvania State University. This one has a broad spectrum of observation of Crabapple trees and their resistance or susceptibility to the five major diseases that effect this group of trees. Observation is going on in many locations. Yearly results on over 600 varieties and cultivars are being summarized by use of a computer. This type of study will establish credibility for the B & B grower to buy and to produce a wider selection of materials. Likewise better credibility will be established for the garden center to stock, sell, and educate the consumer. The same would apply for the landscape contractor and the landscape architect. The next challenge is the need for a forum between the landscape architect and contractors and the growers of tree materials. Future tree needs need to be discussed since it is nearly five years from the time a root stock is developed before a finished bare root tree is ready for sale, or eight years or more before that tree becomes available as a specimen B&B tree for landscape purposes. There is a need for consumer research as basic information for all the various elements of the nursery.

There is a definite trend in demand for higher quality shade and flowering plant materials. The demand and the willingness to pay a higher price for well-grown nursery stock is strongly evident. The consumer is also looking for a wider range of tree characteristics; blossom and color, growth habit, size and general form.

The consumer is probably more open to education now that he has ever been. Efforts are being made for consumer education. It is quite evident that the garden center operators and the landscapers are all beefing up this process in their individual businesses. **WTT**

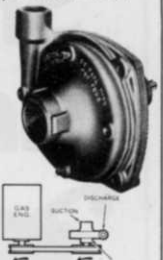
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