The True-to-Name Nursery Stock Program — 1921 to 1963

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The earliest pomological use of the term "true-to-name" of which the writer is aware was in a paper entitled "The Study of Apple Tree Characters and Its Bearing on Variety Substitution," which the late Dr. J. K. Shaw presented at the 1914 meeting of the American Society for Horticultural Science. His opening sentence in that paper, "The failure of varieties to come true to name is one of the serious difficulties of the orchardist, and one that seems to be on the increase," indicates why he became interested in a study of this sort.

During that period it was a common experience for orchardists in New England to have Wolf River apples produced on trees which had been purchased as McIntosh. Elsewhere in eastern orchards Stayman, Old Winesap and Mammoth Black Twig (Arkansas) were badly intermixed. These, and the many other cases of mixture or substitution of varieties, experienced by fruit growers, attested to the need for a solution to this problem.

Certification Plan

By 1920, Shaw had become convinced that "it was possible to detect misnamed trees in the nursery row with practical certainty." In June, 1921, a tentative plan for the inspection and certification, as to variety, of growing trees in the nursery row, was formulated at a meeting of representatives of the Pomology staff of the Massachusetts Agricultural College and Experiment Station, the State Department of Agriculture, and the Massachusetts Fruit Growers' Association. Later that summer the M.F.G.A. voted to sponsor this plan, which was first put into operation in September, 1921, at the J. W. Adams Nursery, Westfield, Massachusetts.

Under this plan, positive identification of each tree was assured by a lead seal attached thru a small hole drilled in an upright branch of a two year old tree. In the sealing process the lead seal was imprinted with the variety name, year sealed, the word "Certified" and the letters "M.F.G.A." Nurserymen charged ten cents extra for such trees to cover the additional costs involved. However, the method was slow, laborious, and sometimes damaging, especially when used on one year whips. Nevertheless, during the period 1921 thru 1928, over 660,000 trees were certified by this method in 13 different nurseries in New England, New York, Pennsylvania and Michigan. Somewhat over 26,000 trees were found not to be the variety claimed, and were therefore refused certification.

Beginning in 1929, the procedure was simplified and possible injury to the tree eliminated by the substitution of a durable paper label which did not require drilling the tree for attachment. However the possibility of easy removal of this label eliminated the certainty of identity of the tree carrying this label when it reached the planter. Four nurseries continued with this type of certification thru the depression years until 1941, when all certification ceased.

Several factors led to the termination of the certification plan, chief among which were: (1) the early realization that in examining only such varieties, and amounts of the same, as the nurseryman desired to have certified (and that done in September), we were not reaching the source of

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misnamed trees, i.e. the budwood; and (2) the requests from an increasing number of nurseries for a type of service which would eliminate mixtures from all of their fruit nursery blocks before budding time, so as to prevent the perpetuation of mixtures.

Nursery Schools

Most nurserymen of that period were practical, self-made men who knew every aspect of the tree growing business because they had grown up in it. Furthermore, they had not yet become accustomed to seeking advise from the agricultural experiment stations, and the extension service, concerning their nursery problems. Hence, many were skeptical that a college professor could identify growing trees by their foliage.

Thus, in an effort to acquaint nurserymen with the methods by which he identified varieties in the nursery row, Shaw, with the assistance of the American Association of Nurserymen, and the agricultural experiment station in each of the areas involved, organized three "schools" of two weeks duration each, for nurserymen in different regions. The first one, held at the New York Agricultural Experiment Station in Geneva in the summer of 1925, became the responsibility of the writer, due to hospitalization of Dr. Shaw the previous week. The second school was conducted by Shaw at Shenandoah, Iowa, the following summer; and the third at Winchester, Tennessee, a few years later. These nursery schools, plus our contacts with individual nurserymen in the certification program, and word of mouth report by one nurserymen to another, spread the news concerning the value of examination and verification in the nursery row by a disinterested party.

Development of the Inspection Program

Examination was extended to cover all apple trees growing in a nursery in 1927. The following year the writer began inspecting blocks of sweet cherry varieties, and soon thereafter, pears and plums were added to the list of fruits being inspected for misnamed trees. The shift from examining two-year trees to one-year whips came early in the development of the inspection program. Not only did this shift permit the elimination of mixtures from this potential source of budwood, but it also made the inspection easier, because most growth characteristics are more distinctive on a one-year whip than on a two year tree. Furthermore, the eye can accurately scan a waist-high row of whips much faster than a jungle of 6 to 8 foot, branched trees. In the case of the sour cherry, examination of most varieties has been confined to two-year trees because of our inability to distinguish between Montmorency and Early Richmond during their first summer of growth in the nursery. The one exception to positive identification among varieties of the fruits mentioned above is found among the bud sports, most of which are indistinguishable from the parent variety in the nursery row. Mixtures in peach varieties have frequently been observed and rogued. However, as far as the writer is concerned, the peach remains the one common deciduous fruit, many varieties of which fail to show sufficiently distinctive varietal characteristics in the nursery row to permit positive identification.

Spread of the Inspection Program

While the writer was studying under Shaw in the early 1920's, there came to Amherst W. H. Upshall, of the Vineland Experiment Station in Ontario, also to learn of the methods of identification being used by Shaw. After that visit, Upshall developed an inspection program in Ontario, and for several years examined peach trees in several nurseries in eastern United States. The program in Ontario has since become the responsi-

bility of the Ontario Department of Agriculture. More recently, a similar program has been developed in British Columbia, with the cooperation of the experiment station at Summerland, with W. D. Christie, of the Provincial Department of Agriculture, in charge.

With the shift from "certification" of a limited number of two-year trees to the "inspection" of all growing stock in a nursery, demand for service of this type increased rapidly from nurseries in eastern United States. By 1943, the four inspectors in our Massachusetts group—J. K. Shaw, O. C. Roberts, L. Southwick and the writer, collectively known as the Massachusetts Trueness-to-name Inspection Service, sponsored by the Massachusetts Fruit Growers' Association—were devoting most of their vacation time each summer to the program in nurseries located in Massachusetts, Connecticut, Delaware, Maryland, Virginia, Pennsylvania, New York, Ohio and Michigan. Within three years time, the program had to be extended to include service to nurseries in Tennessee, Alabama, and then Iowa. With this greatly increased number of fruit trees to be examined each summer, the training of replacement and additional inspectors became a major concern. Thus a serious effort was made to locate one or two young men in each of the nursery areas being served, who would train with us for a few summers, and in due time become responsible for the program in this area. Out of 14 persons who have trained with us since 1945, seven are still active in the program—four as leaders, and three as assistants in their respective areas.

A.P.S. Sponsorship

With ultimate decentralization of this vastly extended program as our goal, it was thought that sponsorship of the whole program by the Massachusetts Fruit Growers Association was not feasible. Hence with the consent of Shaw and the M.F.G.A. Executive Committee, the American Pomological Society was approached in 1951, and, soon thereafter, A.P.S. accepted the national sponsorship of this program, established a standing committee on the True-to-name Nursery Program, and appointed the writer as chairman. The other members of the original committee were A. E. Cott, of Iowa State University, and F. C. Galle, then at the University of Tennessee.

The initial concern of that committee was two fold: (1) to steer the development of the program in new areas, and (2) to assist in locating personnel to train as future leaders in sections of the territory then being served by the Massachusetts group. Little progress has been made on the development of programs in new areas. Hopefully, the committee may have had some influence on the new program dealing with the "Registration of Fruit Trees and the Certification of Fruit Tree Nursery Stock," started in the state of Washington, with the able assistance of E. C. Blodgett, of Prosser. So far, the apparent indifference of some nurserymen has prevented fuller expansion of the program in the South and parts of the Midwest. The second objective of the committee has finally been reached with the recent assignment of a qualified leader for the Michigan area. These new areas together with date of establishment and name of leader are as follows:

1952—Iowa and adjacent states—A. E. Cott, Iowa State University.

1960—New England and New York—W. D. Weeks, University of Massachusetts.

1963—Middle Atlantic States—C. M. Ritter, Pennsylvania State University.

1964 — Michigan — W. J. Young, Michigan Department of Agriculture.

Inspection of Understocks

The A.P.S. annual meeting of February, 1960, requested its True-to-Name Nursery program committee to develop a program for the inspection of rootstocks for trueness-to-name, and to consider the feasibility of including freedom from virus as a requirement of the program. For this study, the committee was increased to nine, in order to include men in various parts of the United States and Canada known to be concerned with some phase of this problem. The result, to date, has been the formulation of a set of "Conditions of Operation" and a "Statement of Inspection" for use where inspection for trueness-to-name includes rootstock as well as variety. Copies of these two items were sent to all known leaders of variety inspection programs, in the hope of establishing a unified procedure wherever inspection of rootstocks was undertaken. To date, a few nurseries have qualified for this Statement of Inspection which reads as follows:

"The salable_____year old apple trees propagated on clonal understocks and now growing in the nursery of _____

_____

have been examined for trueness-to-name of rootstock, interstock, if any, and variety.

To the best of our knowledge all parts of these trees are true-to-name as they stand in the nursery row.

The above named nursery has agreed to attach to each lot of 10 trees or less of such trees sold a label stating the particular rootstock and interstock, if any, as well as variety of which the tree is composed.

_____"

Signed and dated

The nursery to whom this statement is issued is entitled to use it in their advertizing provided it is reproduced in its entirety, exactly as issued. Perforce, the elimination of virus from nursery rootstocks and varieties is a function of state regulatory agencies. On this problem, a committee such as this can make little progress, except by assisting such state regulatory agencies in verifying that their virus-free sources of propagating wood are also correctly named as to variety. There have been cases where incorrectly named virus-free propagating wood was distributed to nurseries. Trees propagated from such wood might be virus-free, but from the orchardist's standpoint could be worthless as to variety.

General Considerations

How many millions of nursery fruit trees have been examined under these voluntary programs is impossible to determine. However, since most of the leading nurseries growing fruit trees in the eastern half of the United States, as well as in Canada, have been employing service of this type for many years, we are confident that the vast majority of fruit trees purchased by eastern orchardists have come under the scrutiny of a variety inspection program.

The reasons why nurserymen subscribe to such a service boil down chiefly to the following: (1) customer demand for inspected trees, (2) fewer costly settlements resulting from misnamed trees getting into commercial orchards, and lastly (3) advertizing value. Naturally, every nurseryman has confidence that his trees are free from mixtures and correctly named until proved otherwise. Yet, it is a fact that only once have we failed to find serious mixtures upon a first visit to a nursery. In that case, the source of budwood had previously been verified; and there was but one budding crew, on which the nursery owner was the budder. Careless nursery employees, fruit growers who at times supply budwood, and even experi-

ment stations have all been responsible for some of the mixtures found. While most mixtures amount to only one bud-stick to a few hundred trees at the most, in a few instances great numbers of misnamed trees have been found such as : (1) 25,000 pear trees labeled Bosc, but were a worthless unknown type; (2) 40,000 apple trees budded for a Red Rome strain, but were Northwestern Greening.

One aspect of this program which has bothered the writer for many years is the lack of positive verification of the identity of the tree after it leaves the nursery row. This weakness becomes increasingly important with the addition of understock parts to the inspection program. Shaw's lead seal method was sure, but slow, cumbersome and costly. Color-coding each tree of the same variety and rootstock combination with a paint mark applied in the nursery row is being tried in a couple of areas with some success. However the number of colors is limited and the method has not yet been perfected.

The writer recognizes that, while much progress has been made since 1921, there is still considerable work to be done before even all commercial orchardists can be assured of getting trees which are strictly true-to-name in all parts, and free from virus.

Regent Apple

A new, promising, hardy apple variety, named Regent, was introduced by the University of Minnesota in 1963. A cross of Daniels Red Duchess with Delicious, it was selected by W. H. Alderman in 1937 at the University Breeding Farm at Excelsior.

Regent is a highly colored apple of excellent quality, which stores very well. The fruit is medium-sized, oblong-conic, with crisp, creamy white, very juicy flesh, and a flavor somewhat like Delicious, but more acid. One weakness is a tendancy for the flesh to brown at the cavity when stored at 35° F. This breakdown is minor at 32° F. the tree is vigorous, bears young and annually. It is susceptible to fireblight and scab, but appears to be very resistant to cedar apple rust. It lacks extreme hardiness.

Fig. 1 A limb of Regent, a new late apple from Minnesota.