and fruit characteristics. It varies from the species in its habit of growth, becoming a narrow column to about 12 to 15 feet but can be easily restrained to lower heights. It may become a little leggy with the base sparsely branched and with little foliage. It does, however, make a good narrow plant for screen purposes.

25. *Symplocus paniculata* — Asiatic Sweetleaf

The Asiatic Sweetleaf is a large shrub or small tree to 30 feet or more but most often is within the 8 to 12 feet range. It is slow growing but makes an attractive rather stiff, wide spreading plant eventually. The leaves are 2 to 3 inches long, bright green in summer and reddish yellow or purple in the fall. The flowers are small, white and fragrant but not particularly outstanding. The most attractive characteristic of the plant is the abundance of small bright blue fruits produced in the fall. It is, perhaps, the most outstanding shrub or small tree that we have with blue fruit It is hardy, does well in sun or partial shade and is worthy of much more extensive use in the landscape, either as a specimen, as a border plant or for hedge purposes.

MR. CHARLES TOSOVSKY: Thank you very much, Chad. The final paper of this afternoon's session is by Roy Nordine, from the Morton Arboretum.

ORGANIZED AND UNIFORM TESTING AND EVALUATION OF NEW CULTIVARS

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My remarks and development of this topic will be limited to the geographical area of the Eastern region of our Society.

Instead of proposing a program with definite forms and plans to implement a testing program, I will review briefly the past, present and future of work with woody ornamentals.

A tremendous amount of effort by many agencies and individuals has been devoted to testing woody ornamentals. New programs and new areas for future development appear each year.

One of the leaders in the introduction and dissemination of new plants has been our Department of Agriculture. In 1898 a separate section was created in the Department for the introduction of plants new to this country. This section is now called, "New Crops Research Branch." Mr. C. O. Erlanson is the director. This agency has brought in more than 285,000 new plants to date. Most of these new introductions are agriculturally economic plants, grains, grasses, forage, fiber, oil, vegetable,

nuts, fruits etc. But there have been many ornamental plants, both annual, perennial and woody.

In recent years the Department of Agriculture has cooperated in a plant exploration program with Longwood Gardens. This Society has enjoyed reports of these trips by John Creech to Japan, Walter H. Hodges to Australia and Fred G. Meyer to southern Europe.

The Plant Introduction Station makes every attempt to propagate these new introductions and make them available to interested and responsible agencies. Some of the seed that John Creech collected on a trip to Nepal in the fall of 1962 has appeared as plants on dissemination lists this fall. About two years after the station has sent out a plant, a questionnaire about the performance of this plant is distributed to all recipients. This information is then gathered and filed and should be available to all interested parties.

In 1961 the Society visited the Plant Introduction Garden at Glen Dale, Maryland. Other stations are located at Chico, California; Miami, Florida; Savannah, Georgia; Experiment, Georgia; Ames, Iowa; Geneva, New York and Pullman, Washington. A number of substations are scattered around the country, each containing a plant collection of material from the parent station at Glen Dale.

In 1945 the station at Ames, Iowa, initiated a project for testing woody ornamental and shelter plants in a 12-state area known as the North Central Region. This includes the area from Michigan to North Dakota and from Ohio to Kansas and Missouri. Performance records are maintained and reports are published after a plant has completed a five year record. Of a total of 153 trees and shrubs in regional trials, 55 plants have been reported on in the three reports published to date. Mr. Albert Dodge gave us a report of these trials at our annual meeting in 1962.

Every state has an agriculture experiment station, and many stations contain an area maintained by the State University Department of Horticuture. These areas vary in size and development from small collections of woody plants, used primarily for study purposes to large, well labeled collections. A few have arboretums. A few examples are as follows:

Rutgers University maintains in the agriculture station an arboretum of 25 acres, containing plants in 400 genera and 2000 species and cultivars. These plants form a collection of 100 hedges, 50 small size trees and some taller shade trees, 65 Taxus selections, vines, Rhododendrons and Azaleas and an orchard and trials of American Holly. There are plans for a larger development of area and services.

In 1948, Auburn University in Alabama began a collection of woody ornamentals in a new area that has grown to include 300 species and cultivars, and all labeled with a plastic, laminated label.

The Virginia Polytechnic Institute at Blacksburg has an arboretum of 60 acres containing 2,600 clones and about 500 labeled trees and shrubs.

On the grounds of the Ohio Agriculture Station at Wooster is the Secrest Arboretum of 75 acres. In 50 years this station has tested nearly 1300 species, varieties, hybrids and clones. This Arboretum also contains several collections under the management of the Ohio State University. Of special interest is a collection of 125 Taxus selections, that began in 1942, and a collection of 90 Flowering Crabapples.

On the campus of Michigan State University at East Lansing there is a collection of 3218 species and varieties of woody plants. In the year of 1959 there were added 273 new species and varieties in 64 genera.

The University of Wisconsin has a new research farm at Arlington, Wisconsin. In cooperation with their state nursery association they have on trial and test 91 various species and cultivars. This will be expanded.

The University of Minnesota has a new arboretum of 150 acres and recently acquired 97 additional acres. They have planted about 1400 species and cultivars from 147 genera of woody plants. In 1962 there were added 361 species and cultivars.

For thirty years the University of Kansas maintained at Manhattan and three substations a collection of 4000 trees in 180 species, plus 20 clonal varieties, 380 deciduous shrubs and 50 broadleaved evergreen shrubs. The shrub collection has been moved twice in five years for new buildings.

All of these institutions make frequent and annual reports on the performance of the plants under observation.

Additional reports can be cited of other plant collections at various state universities and to include the many that have plans for future projects. The substation at North Platte, Nebraska has started a collection of woody plants that will tolerate the arid condition of the western great plains. The University of Nebraska is discussing with their state highway department a project, "The Collection, Propagation, Culture and Evaluation of Plant Materials for Windbreaks, Snow Control, Noise Abatement, Safety and Landscaping on Highway Right-of-Ways."

And then there are the many arboretums of all sizes scattered in all regions of our country. The sum total of their woody plant collections would be enormous. Many of the arboretums that are not limited by planting space maintain an active interest in all new plants as they appear. New arboretums are being formed and others are expanding, both in acreage and number of collections. Most arboretums have some sort of pub-

lication in which their activities are reported and added to the literature. All arboretums are interested in disseminating plant material to interested parties.

A great deal of credit is due to the many nurserymen who have developed new clones through observation and selection. The most notable recent example is the improvement in shade trees. A few nurserymen have the opportunity to travel abroad and have introduced some excellent plant material. A growing number of nurseries maintain their own test and trial plots from which superior selections are frequently made.

We cannot fail to mention the many articles about note-worthy plants that appear in the American Nurseryman. The long series of papers by C. E. Lewis are very informative and the present series by Donald Wyman in sorting out the more worth while species in each genus is invaluable.

Nor can we omit the various organizations that are formed in the interest of one particular group of plants. There now are societies for Roses, Camellias, Rhododendrons, Boxwood, Holly and Magnolia. Each plant society has an active program for the promotion of its particular genus and annually contributes performance reports for the literature. The American Rose Society has a most elaborate and thoro program for screening, testing, announcing and publicizing their product. This is accomplished through a separate group known as the "All American Rose Selections Inc.". Many other valuable reports on the performance of plants have been contributed by the various state and local horticultural and garden club societies.

All of this effort is duplicated through similar agencies and groups in the country to the north, namely Canada.

The word "new" in the title as applied to woody ornamentals can have two meanings. It can mean a plant that is new to the literature or to commerce, as a hybrid, selection, clone, cultivar, etc., or it can be an old plant that becomes "new" when first tried in a new area. Plants that are brand new or only recently created by being hybrids or selections do not appear in any great quantity. During the twelve years from 1948 to 1960 when all nurserymen were requested to register any new plant with the American Association of Nurserymen's office in Washington, about 400 new plants were so recorded. This does not include Camellias. John Wister has recently listed about 90 new cultivars of lilacs that have appeared in the years 1953 to 1963. The first Plant Patent was issued on August 18, 1931 to a climbing rose called "The New Dawn," the number of patented plants to date is 2282. Excepting roses and camellias, only a small number of this large group of patented plants are woody ornamentals. Several of the earlier patents are no longer available.

In the North Central States trials conducted by the Plant Introduction Garden at Ames, Iowa, 153 different species and cultivars have been under test in their twelve state area. Of this

number 37 were brand new plants within the past twenty years. While 116 forms were old in the literature but brand new to the areas where they were being tested. At the Wisconsin Research Farm at Arlington there are 91 various kinds of plants on trial. Twenty-three are new in their origin, less than twenty years old, while 68 lots are new to this area. In both test trials, plant and flower bud hardiness and tolerance to both soils and rainfall are the most important facts to determine.

A well conducted, conservative nursery in a neighboring state is very pleased to have discovered, in the near-by woodland, an ash with outstanding purple fall color. This tree is native to all parts of their state and the species is conspicuous each fall by its purple fall color. In the eyes of the nurserymen it is a new plant and will probably be marketed as such. Incidentally, the tree is White Ash, *Fraxinus americana*.

Who can say how many years are required to evaluate shade and street trees? Arnold Arboretum has reported on a few. Holden Arboretum has now begun a collection. The last Bulletin of the Morton Arboretum reported on 124 different lots that have been added to a plot begun in 1955. Of this number 29 are new plants during the past twenty years. All of these trees must go through their normal life span to be properly evaluated.

A program for evaluating woody ornamental plants could have tremendous value to the industry and the buying public. There are numerous problems involved in creating and establishing such a program, problems such as permanent organization, propagation, distribution, test areas, scoring methods and sheets, awards, publicizing results etc. This program should include the entire continent and is of such scope we cannot discuss all the implications in the few minutes allotted, or in a regional meeting of our society. At the business meeting of the society I will enter a motion for a committee to be selected to consider this topic and report back to the society at our next annual meeting.

PRESIDENT MAHLSTEDE: I would like to thank our afternoon speakers and moderators for the fine job that they have done. We will adjourn until 8:00 p.m. this evening when we will have the reports from the recorders of the round-table discussions.

(The session recessed at 5:15 p.m.)