Annual report of the Wisconsin State Horticultural Society for the year ending July 1, 1924. Vol. LIV 1924

Wisconsin State Horticultural Society
Madison, Wisconsin: The Homestead Co., 1924

https://digital.library.wisc.edu/1711.dl/P32CVGTSAB2NH8G

ANNUAL REPORT

OF THE

Wisconsin State Horticultural Society

For the Year Ending July 1, 1924

VOL. LIV

Frederic Cranefield, Editor
Secretary State Horticultural Society
Madison, Wis.

MADISON, WIS.
The Homestead Co.
1924

LETTER OF TRANSMITTAL

Madison, Wis., July 1, 1924.

To His Excellency, JOHN J. BLAINE,
Governor of Wisconsin.

Dear Sir:—I have the honor to transmit to you herewith the Fifty-fourth Annual Report of the Wisconsin State Horticultural Society.

Respectfully,

FREDERIC CRANEFIELD,
Secretary.

OFFICERS AND COMMITTEES FOR 1924

OFFICERS

W. A. Toole, President.....Baraboo

J. E. Leverich, Vice President.....Sparta

Frederic Cranefield, Secretary-Treasurer.....Madison

EXECUTIVE COMMITTEE

Ex-Officio

President, Vice President and Secretary

For Term Ending December, 1926

J. F. Hauser.....Bayfield

R. L. Marken.....Gays Mills

J. F. Swartz.....Kenosha

N. A. Rasmussen.....Oshkosh

For Term Ending December, 1925

M. B. Goff.....Sturgeon Bay

M. S. Kellogg.....Janesville

James Livingstone.....Milwaukee

W. J. Moyle.....Union Grove

For Term Ending December, 1924

A. K. Bassett.....Baraboo

C. I. Brigham.....Blue Mounds

Wm. Longland.....Lake Geneva

BOARD OF MANAGERS

W. A. Toole

J. E. Leverich

Frederic Cranefield

TABLE OF CONTENTS

FRUITS RECOMMENDED FOR CULTURE IN WISCONSIN

The behavior of varieties of fruits is influenced very largely by their environment. The conditions of soil, exposure and latitude over such an extensive area as the state of Wisconsin vary greatly and no list can be given that will prove satisfactory in all localities. Hardiness of plant and fruit bud has been the leading thought in the selection of varieties.

APPLES, HARDIEST VARIETIES

Usually Hardy in Any Part of Wisconsin.

Duchess, Hibernal, Livland Raspberry, Longfield, Lubsk Queen, Malinda, Patten Greening, Whitney.

APPLES, GENERALLY HARDY

Astrachan (Red), Autumn Strawberry, Delicious, Dudley, Fall Orange, Fameuse (Snow), Golden Russett, Lowland Raspberry, Longfield, Lubsk Queen, McIntosh, Malinda, McMahan, Newell, Northwestern Greening, Duchess, Patten Greening, Saint Lawrence, Salome, Scott, Tolman (Sweet), University, Utter, Wealthy, Westfield (Seek-no-Further), Windsor, Wolf River.

APPLES

Varieties Hardy in Special Localities.

Ben Davis, Fallawater, Gano, Hubbardston, Jonathan, King, Northern Spy, Pewaukee, Sutton Beauty, Willow Twig, York Imperial, Bellflower.

APPLES (Commercial Orchard List)

It is generally conceded that a commercial orchard should consist of but few varieties; the following are suggested: **Delicious, Duchess, Dudley, Fameuse, McMahan, McIntosh, Northwestern Greening, Tolman, Wealthy, Windsor, Wolf River.**

APPLES (Six Varieties for Farm Orchard)

Duchess, Lowland Raspberry, Northwestern Greening, Tolman (Sweet), Wealthy, Windsor.

CRABS

Hyslop, Sweet Russett, Virginia, Whitney.

PLUMS

Of the classes commonly cultivated, viz.: **European, Japanese, Native or American and Hansen Hybrids,** the two last named are most likely to succeed.

NATIVE PLUMS

De Soto, Hammer, Hawkeye, Forest Garden, Surprise.

HANSEN HYBRIDS

Sand Cherry type—Opata, Sapa; plum type; Waneta.

EUROPEAN PLUMS

(Not recommended for general cultivation.) **Damson, Green Gage, Lombard, Moore's Arctic.**

JAPANESE PLUMS

(Not recommended for general cultivation.) **Burbank.**

CHERRIES

Early Richmond, Montmorency.

GRAPES

Brighton (Red), **Concord** (Black), **Delaware** (Red), **Diamond** (Green), **Moore's Early** (Black), **Niagara** (Green), **Winchell** (Green), **Worden** (Black).

BLACKBERRIES

Eldorado, Snyder.

STRAWBERRIES

Varieties starred have imperfect flowers and must not be planted alone.

Aroma, Bubach, Dr. Burrill, Dunlap, Gandy, Glen Mary, *Haverland, *Sample, Splendid, *Warfield.

FALL BEARING STRAWBERRIES

Progressive, Superb.

TWO VARIETIES STRAWBERRIES FOR FARM GARDEN

Dunlap, *Warfield.

RASPBERRIES

Black: **Conrath, Cumberland, Gregg, Plum Farmer.**
Red: **Cuthbert, Marlboro, King, Latham.**
Purple: **Columbian.**

CURRANTS

Red: **Red Cross, Perfection, Pomona, Wilder.**
White: **White Grape.**
Black: **Lee's Prolific, Naples.**

GOOSEBERRIES

Downing.

WARNING.—Currant and Gooseberry bushes should not be planted or permitted to remain within 600 yards of white pine, especially in the northwestern counties. They spread the blister rust, a disease which kills young white pine trees. This applies to ornamental flowering currants also.—State Department of Agriculture.

PEARS

On account of the prevalence of blight and winterkilling, pears are not generally recommended for Wisconsin. Good crops are occasionally produced under favorable conditions, especially in the southeastern part of the state. The following list includes both early and late varieties:

Anjou, Bartlett, Clairgeau, Clapp Favorite, Early Bergamot, Flemish Beauty, Idaho, Kieffer, Lawrence, Louise, Seckel, Sheldon, Vermont Beauty.

TREES AND SHRUBS RECOMMENDED

LARGE DECIDUOUS TREES

Silver Maple	Acer dasycarpum
Wiers Cutleaf Maple	Acer dasycarpum var.
Norway Maple	Acer Platanoides
Scarlet Maple	Acer rubrum
Sugar Maple	Acer saccharinum
Paper Birch	Betula papyrifera
Red Birch	Betula nigra
Hackberry	Celtis occidentalis
White Ash	Fraxinus americana
Green Ash	Fraxinus viridus
Maidenhair Tree	Ginko bilboba
Honey Locust	Gleditschea triacanthos
Kentucky Coffee Tree	Gymnocladus canadensis
Black Walnut	Juglans nigra
European Larch	Larix europaea
American Larch	Larix laricina
Bolles Poplar	Populus Bolleana
Carolina Poplar	Populus monilifera
Black Cherry	Prunus serotina
White Oak	Quercus alba
Scarlet Oak	Quercus coccinea
Bur Oak	Quercus macrocarpa
Pin Oak	Quercus palustris
Red Oak	Quercus rubra
Golden Willow	Salix vittellina
Wisconsin Weeping Willow	Salix blanda
Laurel Willow	Salix pentandra
Basswood	Tilia americana
American Elm	Ulmus americana

FOR STREET PLANTING

American Elm	Basswood
Norway Maple	Pin Oak

SMALL DECIDUOUS TREES

(This class includes small deciduous trees of more value for ornament than for shade or protection.)

Tatarian Maple	Acer tataricum
Juneberry	Amelanchier canadensis
Hawthorn	Crataegus-Crusgalli

Buckeye ..... Aesculus glabra
Russian Mulberry ..... Morus alba var. tatarica
Ironwood ..... Ostrya virginiana
Mountain Ash (native) ..... Pyrus americana
Western Crab Apple (native) ..... Pyrus ioensis
Bechtel's double fl. Crab ..... Pyrus var. Bechtelii

LARGE EVERGREENS

(None of the "large" evergreens should be planted on small lawns on account of their great size at maturity and dense habit of growth. A spruce or a pine may reach a height of 50 to 100 feet with a spread of 50 feet; so also may an elm but the lower branches of the elm may advantageously be removed while such pruning of an evergreen would destroy its beauty.)

Concolor Fir ..... Abies concolor
White Spruce ..... Picea canadenis
Norway Spruce ..... Picea excelsa
Colorado Blue Spruce ..... Picea pungens
Austrian Pine ..... Pinus austriaca
Red Pine ..... Pinus resinosa
Bull Pine ..... Pinus ponderosa
White Pine ..... Pinus strobus
Scotch Pine ..... Pinus sylvestris
Douglas Fir ..... Pseudotsuga taxifolia
Arbor Vitae (White Cedar) ..... Thuja occidentalis
Hemlock Spruce ..... Tsuga canadensis

SMALL EVERGREENS

Dwarf Juniper ..... Juniperus communis var.
Waukegan Juniper ..... Juniperus horizontalis
Japanese Trailing Juniper ..... Juniperus procumbens
Sabin Juniper ..... Juniperus Sabina
Tamarix-leaved Juniper ..... Juniperus Sabina var.
Mugho Pine ..... Pinus montana var. mughus
American Yew ..... Taxus canadensis
Siberian Arbor Vitae ..... Thuja orientalis var.
Pyramidal Arbor Vitae ..... Thuja pyramidalis
Globe Arbor Vitae ..... Thuja compacta

SHRUBS

Mountain Maple ..... Acer spicatum
Thunberg's Barberry ..... Berberis Thunbergii
Weigela rosea ..... Diervilla florida
Weigela ..... Diervilla floribunda
Winged Burning Bush ..... Euonymus alata
Strawberry Tree ..... Euonymus europaeus
Silver Berry ..... Eleagnus argenta
Forsythia ..... Forsythia intermedia
Summer Snowball, Hardy Hydrangea ..... Hydrangea arborescens
Garden Hydrangea ..... Hydrangea paniculata gr.

Amur Privet	Ligustrum amurense
Regal's Privet	Ligustrum Ibota var.
Morrow's Honeysuckle	Lonicera Morrowii
Ruprecht's Honeysuckle	Lonicera Ruprechtiana
Tartarian Honeysuckle	Lonicera tatarica
Mock Orange	Philadelphus coronarius grandiflora
Mock Orange, large	Philadelphus inodorus
Lemoine's Mock Orange	Philadelphus Lemoinei
Russian Almond	Prunus Nana
Smoke Bush	Rhus Cotinus
Cutleaf Sumacs	Rhus typhina var. and glabra var.
Alpine Currant	Ribes alpinum
Flowering Currant	Ribes aureum
Rose Acacia	Robina hispida
Japanese Rose	Rosa rugosa
Cutleaf Elder	Sambucus canadensis var. acutiloba
Golden Elder	Sambucus nigra var. aurea
Buffalo Berry	Shepherdia argenta
Hybrid Snow Garland	Spirea arguta
Billard's Spirea	Spirea Billardii
Bumalda Spirea	Spirea Bumalda
Callosa Spirea	Spirea Callosa alba and rubra
Douglas' Spirea	Spirea Douglassi
Van Houten's Spirea, Bridal Wreath	Spirea Vanhouttei
Persian Lilac	Syringa persica
Downy Lilac	Syringa villosa
Chinese Lilac	Syringa chinensis
Common Lilac	Syringa vulgaris
Wayfaring Tree	Viburnum lantana
Snowball	Viburnum Opulus var. sterilis
Dwarf Cranberry Tree	Virburnum Opulus nanum

ROSES

Hardy garden—Rosa rugosa, Harrison Yellow, Persian Yellow, Cabbage Rose, Michigan Prairie Rose, Madame Plantier, Conrad F. Meyer.

Hybrid perpetual (require winter protection)—Paul Neyron, Mrs. J. H. Laing, Gen. Jacqueminot, Marshall P. Wilder, Manga Charta, General Washington, Ulrich Brunner, John Hopper, Capt. Christy, Druschki, Baron Bonstettin, J. B. Clark.

Moss roses—Salet, Henry Martin, Crested Moss.

Climbers—Prairie Queen, Seven Sisters, Gem of the Prairie, Crimson Rambler, Dorothy Perkins, Excelsa, American Pillar, Paul's Scarlet.

COMPARATIVE HEIGHT AT MATURITY OF DIFFERENT SHRUBS

The height at maturity of the different species must be considered when planting in groups or borders. This will depend so much upon their environment that it is difficult to give the height in feet that any species may be expected to attain. When different kinds are planted under like conditions it may be assumed that relative heights will be maintained.

The following may serve as a partial guide in planting:

Dwarf, 2 to 4 feet

Alpine Currant
Thunberg's Barberry
Rose Acacia
Bumalda Spirea
Callosa Spirea
Meadow Sweet Spirea

Medium, 4 to 8 feet

Hardy Hydrangea (summer fl.)
Japanese Rose
Silver Berry
Garden Hydrangea
Morrow's Honeysuckle
Missouri Currant
Mountain Maple
Billard's Spirea
Douglas' Spirea
Van Houten's Spirea
Persian Lilac

Tall, 8 to 12 feet, some kinds 15 feet

Weigela
Burning Bush
Strawberry Tree
Ruprecht's Honeysuckle
Tartarian Honeysuckle
Mock Orange
Forsythia
Smoke Bush
Buffalo Berry
Common Lilac
Snowball
Wayfaring Tree
Cutleaf Elder
Cutleaf Sumac

NATIVE SHRUBS SUITABLE FOR PLANTING ON HOME GROUNDS

Common Name	*Scientific Name*
New Jersey Tea	Ceanothus americanus
Button Bush	Cephalanthus occidentalis
Alternate Leaved Dogwood	Cornus alternifolia
Bailey's Dogwood	Cornus Baileyi
Round-leaved Dogwood	Cornus circinata
Gray Dogwood	Cornus paniculata
Red Osier Dogwood	Cornus stolonifera
Hazelnut	Corylus americana and rostrata
Leatherwood (Wickopy)	Dirca palustris
Wahoo	Euonymus atropurpureus
Witch Hazel	Hamamelis virginiana
St. John's Wort	Hypericum pyramidatum
Winterberry (Holly)	Ilex verticillata
Trailing Juniper	Juniperus procumbens
Ninebark	Physocarpos opulifolia
Hop Tree	Ptelea trifoliata
Dwarf Sumac	Rhus copalina
Smooth Sumac	Rhus glabra
Staghorn Sumac	Rhus typhina
Wild Rose (dwarf)	Rosa blanda
Swamp Rose	Rosa carolina
Prairie Rose	Rosa setigera

Wild Rose	Rosa humilis
White-flowered Raspberry	Rubus Nutkanus
Purple-flowered Raspberry	Rubus odoratus
Common Elder	Sambucus canadenis
Scarlet Elder	Sambucus racemosa
Meadow Sweet	Spirea salicifolia
Bladder Nut	Staphylea trifolia
Snowberry	Symphoricarpus racemosus
Coral Berry, Indian Currant	Symphoricarpus vulgaris
Ground Hemlock	Taxus canadensis
Maple-leaved Viburnum	Viburnum acerifolium
Sheepberry	Viburnum Lentago
Arrow Wood	Viburnum dentatum
Bush Cranberry	Viburnum americanum
Prickly Ash	Zantoxylum americanum

SIX SHRUBS FOR HOME GROUNDS

The following are all reliably hardy in any part of the state:

Common Lilac, Tartarian Honeysuckle, Rosa Rugosa, Mock Orange or Syringa, Van Houten's Spirea (Bridal Wreath), Thunberg's Barberry.

HARDY VINES

Virginia Creeper	Ampelopsis quinquefolia var.
Engleman's Ivy	Ampelopsis quinquefolia var. Englemanii
Japanese Clematis	Clematis paniculata
Native Clematis	Clematis virginiana
Trumpet Honeysuckle	Lonicera sempervirens
Wild Grape	Vitis riparia

EIGHT HARDY HERBACEOUS PERENNIALS

Phlox, Peony, Larkspur, Bleeding Heart, Lily of the Valley, Iris, Oriental Poppy, Shasta Daisy.

COMPARATIVE HEIGHT AT MATURITY OF NATIVE SHRUBS

Dwarf, 2 to 4 feet

Winterberry	Coral Berry
Trailing Juniper	Ground Hemlock
Prairie Rose	Maple-leaved Viburnum
Wild Rose (dwarf)	New Jersey Tea
Snowberry	St. John's Wort
Hazelnut (rostratum)	Dwarf Cranberry Tree

Medium, 4 to 8 feet

Gray Dogwood	Leatherwood
Winterberry	Wild Rose (tall var.)
Swamp Rose	Arrow Wood
White fl. Raspberry	Hazelnut (americanum)
Purple fl. Raspberry	

Tall, 8 to 12 feet, some kinds to 20 feet

Button Bush
Round-leaved Dogwood
Red Osier Dogwood
Bailey's Dogwood
Common Elder
Scarlet Elder
Bladder Nut
Wahoo
Ninebark
Staghorn Sumac
Dwarf Sumac
Sheepberry
Bush Cranberry
Prickly Ash
Hop Tree
Witch Hazel

SHRUBS REQUIRING PROTECTION

A list of shrubs all of which have been tested and found not entirely hardy without protection:

Common Name	*Scientific Name*
Bladder Senna	Colutea arborescens
Japanese Quince	Cydonia japonica
Slender Deutzia	Deutzia gracilis
Goumi	Eleagnus longipes
Pearl Bush	Exochorda grandiflora
Golden Bell	Forsythia suspensa
Snowdrop Tree	Halesia tetraptera
Kerria	Kerria japonica
Common Privet	Ligustrum vulgare
Purple-leaved Plum	Prunius cerasifera var. (Prunus pissardi Hort.)
Flowering Almond	Prunus japonica
Flowering Plum (double)	Prunus triloba
Tamarix	Tamarix var.
Thunberg's Spirea	Spirea Thunbergii

SHRUBS FOR SHADY PLACES

Alpine Currant
Elders
Ground Hemlock
Hydrangea (arborescens)
Indian Currant
Loniceras
Flowering Currant
Privets
Snowberry
Viburnum (Maple leaved)
Witch Hazel

HARDY PERENNIALS

Scientific Name	*Common Name*
Achillea ptarmica, The Pearl or Boule de Niege	Milfoil
Aquilegia, long spurred Hybrids, many varieties	Columbine
Boltonia, asteroides and latisquama	False Chamomile
Campanula Carpatica	Carpathian Bellflower
Campanula persicaefolia	Peach Leaf Bellflower
Chrysanthemum maximum	Shasta Daisy
Coreopsis lanceolata	Tickseed
Delphinium, Belladonna, Formosum, Hybrids	Larkspur

Dianthus plumarius.....Grass Pink
Gaillardia grandiflora.....Blanket Flower
Gypsophila paniculata.....Baby's Breath
Hemerocallis, several varieties.....Day Lily
Iris, scores of varieties.....Fleur-de-lis

Mad. Chereau	Queen of May
Honorabilis	pallida dalmatica
Silver King	orientalis blue

Lilium tigrinum.....Tiger Lily
Lilium elegans.....Garden Lily
Lilium dauricum.....Garden Lily
Papaver Orientale.....Oriental Poppy

Peony, many varieties—

Six good ones:

Rubra Superba, Late red
Felix Crousse, Midseason red
Festiva Maxima, Early White
Grandiflora
Edulis Superba, Early pink
Officinales rubra plena

Phlox, many varieties.....Phlox

Seven good ones:

Elizabeth Campbell, Light salmon pink
Europea, White, carmine eye
Mrs. Jenkins, White
B. Compte, French purple
R. P. Struthers, Bright rosy red
Beranger, Delicate pink
Miss Lingard, Early white, pink eye

Platycodon grandiflorum.....Balloon Flower
Pyrethrum Ulignosum.....Giant Daisy
Pyrethrum roseum.....Persian Daisy
Rudbeckia purpurea.....Purple Cone Flower
Sedum spectabile.....Stonecrop
Veronica spicata.....Speedwell

NATIVE PERENNIALS ADAPTED TO PLANTING IN HOME GROUNDS

Scientific Name	*Common Name*
Aster Novae Anglae	New England Aster
Anemone pennsylvanica	Prairie Anemone
Anemone Pulsatilla	Badger or Pasque Flower
Asclepias tuberosa	Butterfly Weed
Aquilegia canadensis	Columbine

Campanula rotundifolia.....Harebell
Caltha palustris.....Marsh Marigold
Dodecatheon media.....Shooting Star
Eupatorium ageratoides.....White Snakeroot
Euphorbia corollata.....Flowering Spurge
Helenium autumnale.....Sneezewort
Hydrophyllum canadense.....Waterleaf
Liatris squarrosa.....Blazing Star
Lilium canadense.....Native Lily
Lilium Superbum.....Turk's Cap Lily
Lobelia cardinalis.....Cardinal Lobelia
Mertensia Virginica.....Lungwort
Phlox divaricata.....Woods Phlox
Phlox pilosa.....Prairie Phlox
Physostegia virginica.....False Dragonhead
Polemonium reptans.....Jacob's Ladder
Rudbeckia hirta.....Black-eyed Susan
Tradescantia virginica.....Spider Lily
Trilium grandiflorum.....White Wake Robin
Veronica virginica.....Speedwell
Viola pedata.....Birdsfoot Violet

SPRING FLOWERING BULBS

Tulips, single dwarf early: Duc Van Tholl, pink, scarlet and white, Tulips, medium season: Artus, red; Chrysolora, yellow; Cottage Maid, pink. Tulips, large flowering, late: Darwin, Gesneriana.

Hyacinth, single: Charles Dickens, pink; Baroness von Thuyll, white; Czar Peter, blue.

Narcissus (daffodil): Von Sion, double; Emperor, single; Poeticus and Ornatus.

Crocus: Mixed.

Tulips and other Holland bulbs for outdoor blooming must be planted in autumn, preferably September or October, and will bloom early in spring.

BULBS FOR INDOOR CULTURE

Narcissus: Von Sion (double), Emperor, Princeps, Poeticus, Paper White, Chinese sacred lily.

Hyacinths: Any variety.

Bulbs for forcing should be potted in October or November and kept in a dark, cool cellar for several weeks. When well rooted the pots may be brought to the light as desired for a succession of bloom. The Paper White and Chinese lily may be grown in water and do not require the "dark" treatment.

SUGGESTED VARIETIES FOR WISCONSIN HOME ORCHARDS

From Bulletin 363 Wisconsin Agricultural Experiment Station, April, 1924, by Professor James G. Moore, Horticulturist.

In all cases varieties hardy in the northern part of the state will be hardy in a southern section. However, because better varieties frequently may be grown in the southern sections than certain of those recommended for the northern section, it is not always best to select a variety simply because it is hardy. Figures in the lists refer to divisions on the map.

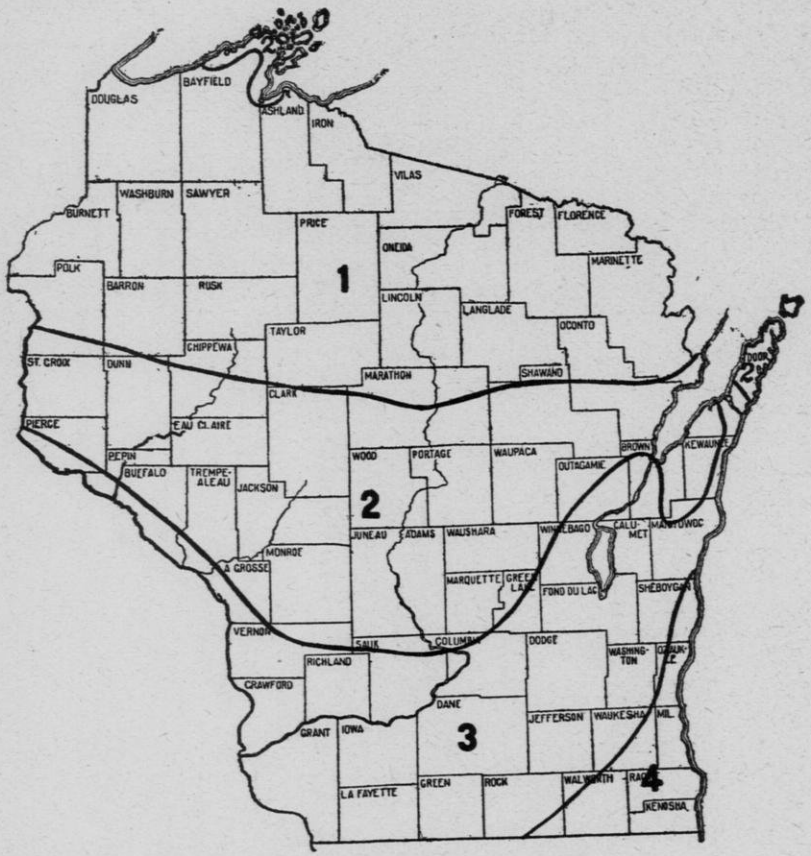

FIG. 7.—FRUIT ZONES OF WISCONSIN

It is possible to divide the state into such zones only in a general way.

Apples

Summer:

1-2 Charlamoff, Yellow Transparent, Lowland Raspberry, Tetofsky, Oldenburg (Duchess).

3-4 Same as above also Red Astrachan.

On account of its susceptibility to fire-blight, Yellow Transparent should probably be omitted.

Fall:

1- Patten Greening, Longfield, Okabena.

2- Dudley, Fall Orange, Fameuse, McIntosh, Plumb Cider, St. Lawrence, University, Wealthy, Wolf River.

3-4 Bailey Sweet, Golden Sweet, Twenty-ounce.

Winter:

1- Malinda.*

2- Delicious, Golden Russett, Northwestern Greening, Salome, Tolman Sweet, Windsor.

3- Grimes Golden, Jonathan, Northern Spy, Stark, Wagener, Winter Banana, Westfield (Seek-no-further), Willow Twig.

4- Hubbardston, King, Sutton Beauty, Stayman Winesap.

Crab apples in order of ripening.

For all sections—Whitney, Martha, Virginia, Hyslop.

*Not recommended for sections 3 and 4.

Pears

1. Cannot be successfully grown in this section.
2. Only the hardiest varieties and then only in most favored situations.
3. Hardiest varieties moderately safe.
4. Hardy varieties escape with only occasional winter injury.

Varieties, (In approximate order of ripening).

Tyson, Clapp's Favorite, Wilder Early, Bartlett,* Flemish Beauty, Lincoln, Howell, Seckel,* Worden Seckel,* Sheldon, Anjou, Keiffer.**

*Slightly more tender than other varieties.

**Hardiest, but poorest in quality.

Plums

1. Hansen Hybrids.
2. Native.

3-4. European and Japanese fairly successful.

Hansen hybrids—sand cherry type; Opata, Sapa, Plum type; Waneta, Toka, Tokata.

Native—De Soto, Forest Garden, Hammer, Hawkeye, Surprise,* Terry.

*Somewhat shy bearer as tree gets older.

European—Damson (for conserve), Lombard, German Prune, Italian Prune, Green Gage.*

*Not as hardy as other varieties, needs very favorable location.

Japanese—Abundance, Burbank.

Not recommended for general culture.

Cherries

1. and West three-fourths 2. (Substitute sand cherry type of Hansen plums or compass cherry-plums.)

3-4 and east fourth 2. Early Richmond, Montmorency.

Peaches

Peaches can scarcely be recommended even in the most favored sections. Occasionally seedling peaches live to produce fruit two or three years.

Elberta and Champion are among the most successful named varieties.

Some varieties not listed may be quite as satisfactory in certain areas as those suggested, but in general those recommended are most satisfactory.

CONSTITUTION AND BY-LAWS

OF THE

WISCONSIN STATE HORTICULTURAL SOCIETY

(As amended January 13, 1921.)

With Brief Historical Outline

In November, 1853, a small group of Wisconsin fruit growers met in Whitewater and organized the Wisconsin Fruit Growers' Association. According to the scant records available this association flourished until the beginning of the Civil War.

September 29, 1865, a similar group which had been in attendance at the state fair held in Janesville met and organized the Wisconsin State Horticultural Society. The first officers were: President, B. F. Hopkins; vice-presidents, one in each county named; secretary, J. C. Plumb; treasurer, F. C. Curtis; executive committee, Geo. J. Kellogg and L. P. Chandler.

For several years annual meetings were held at the same time and place as the meetings of the Agricultural Society and the proceedings printed in one volume.

In 1871 the society was granted a charter by the legislature and provision made for the publication of the reports of the society in a separate volume. From that time to the present the society has been a ward of the state, receiving state aid in return for which it has rendered a distinct service through the collection and dissemination of information on fruits, flowers and vegetables.

The society during its early years confined its efforts largely to the testing and selection of varieties suitable to our climate, an extremely important and valuable work.

The activities of the society have broadened from decade to decade through its more than half century of existence until it is now recognized as an important factor in the state's progress and as one of the most progressive and active organizations of its kind in the United States.

In 1904 the society departed from the plan followed by practically all horticultural societies of paying the secretary merely a nominal salary for nominal services and provided funds for a full time secretary and a central, permanent office. Probably no other step has exerted greater influence on the society than this.

From 1896 to 1901 the society published a monthly journal, The Wisconsin Horticulturist. The records fail to show why it was discontinued.

From 1906 to 1910 Bulletins were published at irregular intervals, nineteen in all, of quarto size ranging from 8 to 32 pages.

September, 1910, marked the birth of Wisconsin Horticulture, a 16-page monthly journal sent to members and exchanges only. The membership fees and advertising more than cover the expense of publication, leaving a handsome margin of profit.

Early records show that the society was active in promoting horticultural exhibits at the state fair and it appears that close relations existed between the society and the fair management until the early eighties, when a break occurred. Beginning with the 1904 state fair and to the present the society has again taken an active part in these exhibitions, expending in one year as high as one thousand dollars of its funds for an exhibit of fruit.

Relations with the Horticultural Department of the Agricultural College have been strengthened and the society and the department now work in perfect harmony.

In this brief outline much has necessarily been omitted; no mention has been made of the spirit, the soul, of the organization. A perusal of the reports of the society leaves the impression that the courage and tenacity of purpose of that little group of sturdy pioneers who met in Whitewater in 1853 has been transmitted to their followers and has been our guiding spirit until the present day. As out of the oaken glades, rich bottom lands and rolling clay terranes of our state there has been developed one of the richest agricultural domains in the world, so have the men and women who have had the love of fruit and flowers in their hearts kept pace through a half century and more with the progress of events and have through the medium of the Wisconsin State Horticultural Society built up a splendid horticultural industry in our state.

FREDERIC CRANEFIELD, *Secretary.*

CONSTITUTION

Article 1. This Society shall be known as "The Wisconsin State Horticultural Society" and its location shall be at the city of Madison, Dane county, Wisconsin, where its principal office shall be maintained.

Article 2. The object of this Society shall be the advancement of the art and science of horticulture throughout the state.

Article 3. This Society is formed without capital stock.

Article 4. This Society shall consist of life members, annual members, honorary life members, and honorary annual members. The fee for membership shall be fixed by the Executive Committee.

Honorary annual members may, by vote, be elected and invited to participate in the proceedings of the Society. Honorary life members shall be elected by vote of the Society, and shall be distinguished for special merit in horticultural and kindred sciences, or shall confer some particular benefit upon the Society.

Article 5. The general officers of the Society shall be a President, Vice-President, Secretary-Treasurer to be known hereinafter as Secretary, and an Executive Committee, consisting of the foregoing officers and eleven additional members, a majority of whom shall constitute a quorum at any of its meetings.

The officers aforesaid, except the Secretary, shall be elected by ballot, at the annual meeting, and shall hold office for one year thereafter and until their respective successors are elected. The Secretary shall be appointed by the Executive Committee at its annual

meeting after the election of officers and shall hold office for one year thereafter or until his successor is appointed.

Article 6. The principal duties of the general officers shall be as follows:

The President shall preside at all meetings of the Society and of the Executive Committee, shall exercise a general supervision and control of the business and affairs of the Society, and shall sign all leases, deeds and instruments for the transfer, conveyance or assignment of the corporate property, and all contracts, papers and instruments necessary or convenient in the transaction of the business of the Society, and when necessary, acknowledge the same.

The Vice-President shall act as President in case of the absence, disability or removal of the President.

The Secretary shall conduct the general correspondence of the Society and keep a record of the business and of the proceedings at all meetings of the Society and of the Executive Committee; he shall keep, safely and systematically, all books, records, papers and documents belonging or pertaining to the Society or the business thereof; he shall countersign all deeds, leases and conveyances, and, when necessary, acknowledge the same.

He shall receive and safely keep all moneys, notes, securities and property of the Society, which may come into his hands and shall pay out or dispose of the same only upon such terms and conditions as the Executive Committee may direct or the by-laws provide. He shall keep a correct account of all moneys received and disbursed and shall render such account of the same as shall be required by the Executive Committee or prescribed in the by-laws. And he shall execute a bond to the Society, in such sum, and with such sureties, as the Executive Committee shall approve, conditioned upon the faithful performance of his duties, and for the payment and delivery to his successor of all the moneys and property of the Society in his hands or under his control; which bond when approved shall be filed with the President.

The said officers shall perform such other additional duties as may be required and any of the duties and powers of said officers may be performed or exercised, as far as is lawful, by such other officers, persons or committees as the Executive Committee may provide.

Article 7. The Society shall hold its annual meeting for the election of officers, exhibition of fruits, and discussion, in the city of Madison, Wisconsin. Other meetings shall be held at such time and place as the Executive Committee may direct.

Article 8. Only persons holding memberships according to the regulations of the Society shall be members of it.

Article 9. This Constitution, with the accompanying By-Laws, may be amended, at any regular meeting of this Society by a two-thirds vote of the members present; provided that such amendment is presented in writing.

RULES AND BY-LAWS

Article I.—Membership.

Section 1. The Secretary shall decide upon all applications for membership in accordance with the Constitution and By-Laws of the Society.

Sec. 2. Any member maliciously or intentionally injuring or working in opposition to the Society or its purpose in promoting horticulture may upon return of his membership fee be summarily expelled.

Article II.—Meetings.

Section 1. The Executive Committee may fix the time and place for holding the annual meeting of the Society, if the last meeting thereof failed to do so, and may call such meeting by giving at least thirty days' notice to each member. Such notice shall be given by the

Secretary, by mailing the same, postage prepaid, to each member at his last known address.

Sec. 2. Notice of a special meeting shall be mailed to each member at his last known address by the Secretary at least six days before such meeting is to be held. Such notice shall state the business to be transacted and the date, hour and place of meeting, and no business other than that stated in the notice shall be considered at such meeting.

Article III.—Duties of Officers—The President.

Section 1. The President shall preside at all meetings of the Society and of the Executive Committee; he shall, with the advice of the Secretary, call all meetings of the Society if the Executive Committee fail so to do; he shall appoint the delegates to the meetings of the other State Horticultural Societies; he shall have a general supervision of the business and affairs of the Society, and he shall deliver an annual address upon some subject connected with horticulture.

Sec. 2. He shall sign and acknowledge all leases, deeds, and instruments for the conveyance or transfer of the Society's property; and all other contracts, papers and instruments necessary or convenient in transacting its business.

Sec. 3. In case of the absence from any cause of both the President and Vice President the members present, if a quorum, shall elect one of their number temporary president.

Article IV.—The Secretary.

Section 1. The Secretary shall attend to all the correspondence of the Society, he shall keep a correct and complete record of the business and of the proceedings at all meetings of the members and of the Executive Committee.

Sec. 2. He shall superintend the publication of the Reports of the Transactions of the Society and publish or cause to be published such special bulletins on timely and appropriate subjects and such special reports of the condition and results of experimental work in the Trial Orchards and Trial Stations as the Board of Managers may direct.

Sec. 3. He shall present a detailed report of the affairs of the Society at its annual meeting. He shall endeavor to secure reports from the various committees, and from local societies, of the condition and progress of horticulture throughout the state and report the same to the Society. It shall be his duty to make a report to the Governor of the State of the transaction of the Society according to the provisions of the statutes for state reports.

Sec. 4. He shall be superintendent of all Trial Orchards and Trial Stations. In that capacity he shall supervise the planting and cultivation of, and exercise general control over the same, subject to the directions of the Trial Orchard Committee.

Sec. 5. He shall engross in the general record book of the Society a true copy of the Constitution, Rules and By-Laws, and all amendments thereto and all resolutions of the Society and of the Executive Committee.

Sec. 6. He shall keep a record book in which shall be entered the names of all members of the Society from its organization, the place of residence, time of acquiring membership, and time of cessation of same.

Sec. 7. He shall notify all persons elected to office within ten days thereafter, if such persons were not present at the election.

Sec. 8. He shall keep a book in which a correct list of the property of the Society shall be entered. He shall draw all orders, checks,

etc., ordered by the Executive Committee or Board of Managers and countersign the same when signed by the President.

Sec. 9. He shall keep a stub or record of all orders, checks, etc., drawn and delivered, showing the date and amount thereof and to whom and for what purpose the same was issued.

Sec. 10. He shall receive all fees for membership, and give proper receipts for the same.

Sec. 11. He shall, before entering upon the duties of his office, execute a bond to the Society in such sum and with such sureties as the Executive Committee may direct, conditioned as provided in the Constitution.

Sec. 12. He shall receive and be responsible for the safe-keeping of all moneys, notes, securities, credits, etc., of any and every nature, belonging to the Society which shall come into his hands.

Sec. 13. He shall keep proper books of account and a true and complete record of all business transacted by him for the Society; he shall keep proper vouchers for all money disbursed and shall render such accounts and statements of the moneys received, disbursed and on hand, and generally of all matters pertaining to his office as the Executive Committee may require or the By-Laws direct.

Sec. 14. He shall disburse the money of the Society only on the written order of the President, countersigned by the Secretary, and shall make an annual report of the receipts and disbursements and furnish the President with a copy of the same on or before the first day of the annual meeting.

Article V.—The Executive Committee.

Section 1. The Executive Committee shall have the general care and management of the property, affairs, and business of the Society, and a majority of its members shall constitute a quorum. The President and Secretary of the Society shall be President and Secretary of the Executive Committee.

Sec. 2. Meetings of the Committee may be called by the President, the Secretary, or by the Secretary on the written request of five of its members.

Sec. 3. They shall fix the amount of the Secretary's bond, the number of his sureties and approve the same. They may require any other officer, agent, or employe of the Society to execute a bond and prescribe the amount and conditions thereof, and approve the same.

Sec. 4. They may prescribe such salary or compensation for any officer, agent, or employe of the Society as they may deem proper, but not for a longer term than until the next annual meeting of the members, nor shall any officer of the Society be entitled to or receive any benefit, salary or compensation for, on account of, or during the time that he may be absent beyond the boundaries of the state unless such absence was at the request and on behalf of said Society.

Sec. 5. The Executive Committee shall have the power to remove any officer for official misconduct or neglect of the duties of his office. In case of vacancy in any office, either by resignation, removal or otherwise, such vacancy shall be filled by appointment by the said Committee, but such person shall hold office only for the unexpired portion of the term.

Sec. 6. The Executive Committee shall make such rules and regulations for the conduct of the business of the Society, not inconsistent with law, the Constitution, or the Rules and By-Laws, as they shall deem expedient and for the best interests of the Society.

Article VI.—Committees.

Section 1. The President, Vice-President and Secretary shall con-

stitute a Board of Managers which may conduct any business deemed necessary for the Society in the absence of the Executive Committee. All bills against the Society must be audited by the Board of Managers before being paid.

Sec. 2. Regular meetings of the Board of Managers, shall be held bi-monthly to audit accounts and transact other business; special meetings may be called by any member of the Board.

Sec. 3. The President shall annually appoint a Committee on Finance of three members, and one member of the committee on Trial Orchards and Trial Stations, of three members, to be appointed for a term of three years, and such other committees as may from time to time be necessary.

Sec. 4. It shall be the duty of the Finance Committee to settle with the Secretary and to examine and report upon all bills and claims against the Society which may have been presented and referred to them, provided, however, that no member of the Executive Committee shall be a member of the Finance Committee aforesaid.

Sec. 5. The Trial Orchard Committee shall have general control of the locating, planting and care of all Trial Orchards and Trial Stations, and may visit collectively each orchard and station once each year or oftener if deemed necessary. Meetings of the Committee may be called at any time by the President of the Society or by the Superintendent of Trial Orchards.

Article VII.—Miscellaneous

Section 1. The foregoing Rules and By-Laws shall take effect and be in force from the date of their adoption.

AN OUTLINE OF THE WORK OF THE WISCONSIN STATE HORTICULTURAL SOCIETY

The Wisconsin State Horticultural Society conducts field work at fifteen different points in the state as follows:

Baraboo, Holcombe, Pewaukee, Lake Geneva, Weston, Waupaca, Wisconsin Rapids, Onalaska, Milton Junction, Fort Atkinson, Menomonie, Kenosha, Milwaukee, Webster, Poplar.

A "Trial" Orchard is located at each of the five first-named places.

The Trial Orchard work was begun in 1897 at Wausau for the purpose of testing the hardiness and adaptability of the different varieties of tree fruits in the northern or "cut-over" regions of the state.

The orchard at Holcombe is a "Trial" Orchard, being for the purposes above indicated.

The remaining orchards are located in sections where tree fruits are known to thrive and are designed as "Model" or demonstration orchards to show the best methods of culture, best varieties for market, etc.

An account is opened with each of the "Model" orchards with the confident expectation that a decided margin of profit will be shown at the end of ten or twelve years. The orchards should then yield profitable crops for twenty years longer with but moderate expense for maintenance.

In the spring of 1921 four small fruit stations of one acre each were established. These are for the purpose of demonstrating best methods of cultivation of raspberries, blackberries, etc. The work is carried on in cooperation with the county agricultural agents. Four additional stations were established in 1922 and four in 1924.

In these ways the Society hopes to demonstrate the possibilities of fruit growing in Wisconsin.

Additional Aims and Purposes of the Wisconsin State Horticultural Society

Organized in 1865, being the legitimate successor of the Western Fruit Growers' Association, which was organized in 1853.

Chartered by the State of Wisconsin in 1871.

Purely an educational institution.

Its purpose the advancement of every branch of horticulture throughout the state.

Aims to accomplish this through publications, individual help and conventions (two yearly).

Issues an annual report containing articles by experts on orchard culture, small fruit and vegetable gardening and the decoration of home grounds. Sent free to members.

Issues a monthly magazine, WISCONSIN HORTICULTURE, which is sent free to members.

We Answer Questions

Individual help is furnished through the Secretary who obtains from reliable sources information on any horticultural topic. No charge for such services.

Receives an annual appropriation from the state for the support of the field work and other activities.

Extends an urgent invitation, a promise of help and the hand of fellowship to all who want to learn about the growing of fruit, flowers or vegetables; to all who love the beautiful in nature a hearty welcome is assured.

Cordially invites every person in Wisconsin who wants to know something about fruit, flowers or vegetables, to become a member, as such persons are needed to help along the splendid work in which the Society is engaged.

FREDERIC CRANEFIELD,
Secretary W. S. H. S., Madison.

WISCONSIN HORTICULTURE

A WISCONSIN MAGAZINE published by the **WISCONSIN STATE HORTICULTURAL SOCETY** containing each month articles on fruit, flower and vegetable growing written by **WISCONSIN** growers for **WISCONSIN** conditions.

In this respect it is in a class by itself, as horticultural papers published for profit must cover the whole country.

WISCONSIN HORTICULTURE is not published for the purpose of making money, but exclusively for the benefit of the people of Wisconsin.

It is better for **WISCONSIN** people—than any other horticultural paper published. It tells the best varieties to plant in **WISCONSIN,** the best methods of cultivation for **WISCONSIN.** It's a paper for the home gardner and fruit grower as well as for the big grower.

"WE ANSWER QUESTIONS" is the slogan of the society. Every question answered, first by personal letter and then in the paper.

Every dollar received for fees (subscriptions) and advertising is put into the paper.

Honest nurserymen advertise in **WISCONSIN HORTICULTURE** and only that kind. The other kind cannot buy space.

The price, one dollar, includes membership in the **STATE HORTICULTURAL SOCIETY.**

No formal application necessary; send fee to secretary.

FREDERIC CRANEFIELD,
Secretary W. S. H. S., Madison.

TRANSACTIONS

OF THE

WISCONSIN STATE HORTICULTURAL SOCIETY ANNUAL CONVENTION, JANUARY, 1923

The annual convention of the Wisconsin State Horticultural Society was held in the Assembly Room of the Capitol Building, January 10, 11 and 12, 1924, President Toole in the chair.

The meeting was called to order at 10:30 a. m. and the president introduced Governor Blaine, who spoke as follows:

ADDRESS OF WELCOME

From Reporter's Transcript, not revised by Governor Blaine.

BY GOVERNOR BLAINE

Mr. President, Ladies and Gentlemen: It always gives me great pleasure to extend greetings on behalf of the State of Wisconsin to the Horticultural Society, not as a formal matter, but from the standpoint of an interest in the work of your organization. I know something about the importance of horticulture; I know something about the possibilities of Wisconsin for horticulture and other undertakings involving the manual labor upon the farm and our homesteads.

Wisconsin is peculiarly located, very fortunately located, from the standpoint of latitude and longitude and with relation to certain physical formations. Here in the great northwest in this commonwealth, originally carved out of the forest by a people coming from all parts of the civilized world, with a climate which I regard as productive of and promoting a virile people; we are situated on two of the largest fresh water lakes of the world, washed on the western boundary by the mighty Mississippi river and traversed by innumerable rivers, and streams and brooks; producing a physical contour of a country of widespreading prairies, of undulating hills and of fertile valleys. Located in the latitude we are we find a variable and sometimes, true, a severe climate, but the very fact that we have the variable and

sometimes severe climates gives us a physical stamina and endurance quite superior to people of that climate which is more moderate for the whole year round. Such is our physical location. Due to that fact and due to the fact that we have a veritable melting pot of people, Wisconsin has developed her industries along lines running into the scores, so far as farming and agriculture and related subjects are concerned.

We have in this state no such thing as the problem of a single crop. We produce quantities of practically all the fruits, the vegetables and the grains outside of those that are produced in tropical climates. Our agricultural interests are so varied that we not only have the weekly and monthly income from the dairy interests but we have also the cash income from what is known as cash products. These situations left Wisconsin, following the world war, going through the depression and the hard times with a great deal more stability than any other state in the Union and due, I think, to the very causes that I have previously recited. And not the least of those products and not the least of those undertakings is the horticultural interest. Located as we are, however, I think it is our regret that those interests have not extended and expanded as rapidly as possible. This organization has been useful in promoting the horticultural interests. Its existence is necessary for the promotion of horticultural interests and therefore it is an obvious sign for the future that this one interest so vital to the welfare and happiness of the people will be further promoted until Wisconsin will stand horticulturally at the very head of the column of states.

Horticulture affords that type of products so essential to the dietary of the people. Those who have learned the use of fruits and other horticultural products realize that it promotes the health and welfare of the individual and so, as the general health and welfare of the individual is promoted, the general health and welfare of the whole state of Wisconsin is promoted. And therefore, my friends and fellow citizens, I wish for you unlimited success. You constitute the vehicle for the promotion and extension of the inspirational part of the work and I submit that the best work that is done, no matter what calling in which the work may be done, is through inspiration that gives the strength and the will to carry on that work zealously and with a determination that ultimately means tremendous success. And I think we must depend upon inspirational things in this world for the

promotion of success. We have enough of the dark clouds, we have enough of the sad side of life and the distress of the world and all that sort of thing, and if our minds were to be given over entirely to the consideration of want and distress our best work cannot be done. And so it is the inspirational part of mankind that produces the works of art, the literary productions; the agricultural accomplishments; the best that there is in statecraft; and so in horticulture, it is the inspiration that will promote the best success in that calling; and this organization, as I said—as I want to repeat—is the vehicle that carries this inspiration, the instrumentality, the agency through which the inspiration can be given and so, my fellow citizens, I wish for you success in this line of work and whatever success comes to you means that that success will in part be divided by the great multitude of the people, especially others who are engaged in the same line of work; and so, on behalf of the people of the state of Wisconsin I most cordially greet you and welcome you and trust that your deliberations here will be such as it is your ambition to have them, promoting the best interests of the State of Wisconsin through your organization, just as the best interests of the state must be created through the multitude of volunteer organizations engaged in work that is of importance to our people and to our state.

RASPBERRIES AND BLACKBERRIES; HOW TO GET THE BERRIES

P. A. WOOD, Baraboo

I haven't been able to ascertain why the program committee asked me to read a paper on the raising of small fruit, for I am not a man that has become wealthy through that business and in my trips throughout Wisconsin I have not found any other grower that is overly prosperous.

While my father raised small fruits when I, as a boy, was still on the farm, I myself was in another kind of game for twenty years and it was five years ago when I threw up my job, went back to Baraboo and took over my father's farm.

My work during those twenty years took me around the United States considerably, and being inclined, as I was, to horticulture, it was always of interest to me to visit, inspect and study gardens, fruit farms or nurseries adjacent to districts that I would be working in.

Moreover, when I did go back to farming, I applied cost-keeping records, the same as I had in my other work, and I soon found out that the fruit grower works under as little overhead as any other kind of farmer.

My principal crop is red and black raspberries and strawberries, with some currants, grapes and blackberries.

For red raspberries I have the St. Regis, everbearing, the King and the Cuthbert, the Cuthbert being my principal fruiting berry. Am propagating several other varieties for comparison, but the Cuthbert is my bet. The Cuthberts that I have have been carefully selected and propagated each year for a good many years from new plantation, thrifty plants, free from root gall or cane borers. Am not saying this to advertise my stock, for that would seem to me unethical in this society, but to bring out the fact that the only way that one can have any success in fruit growing is to plant at first, not only the most healthy and vigorous plants that can be obtained, but also to propagate ahead from the cream of what one already has and to do everything possible to

raise the grade of one's own plants and improve thereby the quality of the fruit.

In setting out a new bed, as I do every year, and which is in accord with my father's policy for years, I plant just as early in the spring as I can work the ground to advantage. For plants, I select the most healthy and vigorous plants from as near mother root as can be obtained and from new plantation beds. Have observed that plants from old beds are more susceptible to root gall and cane borers than from new beds. I do not plant these roots deep. On examination of a red raspberry root you will find that the roots have a tendency to run out along the ground with sprouts coming up at intervals and that only in mother hills that have been cultivated close to the hills is there any tendency for tap roots leading downward. Therefore, the roots are planted shallow, two to three, and never more than four inches from surface of ground.

By planting thus, early, the spring rains come and a good stand is assured but after the 10th or 12th of May it is more improbable of getting results, for the dry weather beats them out. I find also that deep planting smothers or mildews the portion of root that is set deep and that eyes on top part only will go ahead and grow and produce sprouts. So in placing roots in ground they should be spread out naturally rather than allow a part of root to go to bottom of a deep spade hole.

As to why I prefer the Cuthbert: I like its flavor, either fresh ripened, canned or preserved. If picked right, handled right, and shipped right, it reaches the customer in a reasonable length of time in better condition than any other red raspberry, without softening or changing color, mushing together or juice starting. I ship entirely in pint boxes. Another reason for which I prefer the Cuthbert is on account of the way the fruit clings to fruit stem, on account of its enlarged end within the berry. This tends to prevent it dropping off easily during winds or rains when ripe.

For early market, of course, I have St. Regis everbearers, and King, and have patches so arranged that my heaviest picking of Kings comes at about the time Cuthberts are coming on nicely; but once Cuthberts are on strong, I do not even pick the earlier varieties for nothing tends as much to keep the market down as undersized fruit, and the pickers get so disgusted that after

picking the larger fruit they are disgruntled at picking the smaller.

One of the most common complaints against red raspberries is on account of sucker growth, but this complaint has no foundation. The correct method of cultivation eliminates this and improves both quantity and quality of fruit.

In the first place, the fruiting bush should have plenty of light, then, too, the roots have got to be stirred and a part of them removed or they get root-bound, and small fruit results. To avoid all this I put my rows seven or eight feet apart.

My first operation of cultivation in the spring, immediately after pruning and tieing, is to plow through the aisles with a one-horse pony plow, throwing dirt to center of aisle, and putting plow fairly close to hills in row, but holding a little slanting on last furrow so as not to damage roots too severely. Plow just enough at a time to keep ahead of men hoeing, and follow immediately behind them with cultivator, leveling down my plowing some, but not entirely, and enough to break up all lumps and have a fine dust mulch. I do this cultivating at least once a week, and oftener under certain conditions, especially when the sun comes out hot after a rain and I see the ground starting to cake. This checks and removes suckers in aisles.

Along about the first of June, I plow the aisle again, throwing dirt back towards row, but not enough to bury or smother plants, and keep at cultivating incessantly.

The last few years, I have hoed a second time just before fruiting, in order to keep dust mulch around plants. You can readily see that this is expensive work and that one has got to fight for highest possible price in order to check out right; but it is the only method by which either my father or myself have been able to insure ourselves against total loss of crop during some of the dry seasons and continue to have a patch of fruit regularly year after year.

I plowed up one field last year that had fruited nine seasons and am fruiting one patch this year that was planted ten years ago.

In pruning, I cut stalk back pretty well; in fact, further than most other growers and never tie more than five stalks, and usually only three or four, but do this in such a manner as to make a braced hill which helps it to support itself against the wind.

Most of my raspberry ground is a clay loam, well drained but with few places steep enough to wash readily, the subsoil being mostly gravel.

I use very little fertilizer, but manure ground year before planting and again at second year, using well rotted manure. I put this second coat on in the fall and that lets me work it into ground nicely the next spring.

My observations on several varieties of red raspberries, demanded of me, by Mr. Cranefield to report on to this society, are as follows:

In the first place, I planted these on some of my most fertile ground on a gradual north slope, rows running east and west, with a patch of Cuthberts on one side and a patch of St. Regis everbearing on the other. They had the same identical cultivation as adjacent patches, therefore, my comparisons must be absolutely fair.

I have not been able to distinguish one bit of difference between Victory and Cuthbert. Leaves, stalks, roots and fruit are identical, and do not vary even in season.

Erskine Park has some pecularities of St. Regis; seems to be hardy, twenty-two plants out of twenty-four growing, leaves are thick and green; leaves themselves do not seem to grow as vigorously as other varieties and fruit arms were short at beginning of season but latent arms developed which fruited fairly well. Ranks with St. Regis as plant maker. However, I consider the St. Regis the better of the two varieties from developments to date.

Of the Early June, sixteen plants lived, seems to be a poor plant maker and has tendencies to gall-root. The fruit is short and stubby, on short stubby fruit arms, and resembles the King.

Of the last named, but two plants lived. Seems to be a poor plant maker, not at all vigorous. Fruit this season was scarce, but of fair quality.

The Empire was also somewhat disappointing. Indications are that it also is a poor plant maker. Fruits later than Cuthbert; quality of fruit fair.

Another spring I will propagate from the most healthy of these plants up to at least a dozen of each variety, and by another year can probably send in a more accurate report, these having been planted one year ago last spring and have not had a chance to demonstrate their worthiness.

Of the black raspberries, I have Cumberland, Kansas, Plum Farmer and Gregg. Have always preferred the Kansas for the early variety until lately, but have grown to prefer the Cumberland. This is a hardy, vigorous grower, a good quality heavy fruiter and berries have more pulp around seeds than have the Plum Farmer.

In my estimation, however, the old-fashioned Gregg beats them all for vigor, flavor of fruit and appearance, but is more susceptible to winter-killing than the others. It is my latest variety.

My method of cultivating black raspberries is somewhat the reverse from that used with the red. After the first year, I never plow away from row; rather keep dirt working towards it but not too heavily.

Tie to stakes at each hill and put up from three to five stalks, never more—according to vigor of plant.

I spray according to experiment station, against anthrax and find that it pays. I am also very careful not to propagate any tips showing tendencies towards this disease.

Cut all stalks low, thereby improving quality of fruit, though sometimes limiting the quantity.

Five to six years is a good enough age for these varieties, though I have one patch of Kansas eight years old that I fruited for the last time this past season, and have one patch of Gregg ten years old that this year has as thrifty appearance as any patch that I have got, but which was planted under ideal conditions. Will also say that this variety seems less susceptible to anthrax than any other variety.

Always plant on slightly sloping ground in order to be assured of drainage and on rich clay loam.

For climate and soil around Baraboo I prefer the Ancient Britain blackberry, planted on rich land, north slope and sheltered. Get out of these with as little work as possible for they are a hard proposition to put labor up against and get one's money back.

I have the Lucretia dewberry, but for fruit just let them grow wild. At that they greatly excel any of the old-fashioned wild dewberries. Haven't been able to find any method of cultivation that gets results in fruit.

Prefer Fay's Prolific and Perfection for currants, and while I have some other varieties, these are the ones that I recommend for Wisconsin soils and climate.

There is nothing nicer than a few bushes of this fruit in one's garden, but I haven't as yet been able to figure them out, commercially.

Now, I don't suppose that I have told a single man here anything new about the culture or raising of small fruit plants. I realize that every man raising this crop has worked out his own scheme, according to his soil, climate and labor conditions, and believes that he is efficiently getting his full crop.

But I sometimes think and sometimes know that at most of our farmers' meetings, institutes, county fairs and associations, we give too much attention to rehashing methods of production without paying enough attention to marketing, and especially unloading our surplus, as the more efficient our production the greater the problem of unloading. I believe that we are all agreed that none of us are making the money out of this game that we are entitled to for the work that we have to put into it.

By removing the surplus from one's own neighborhood settles the market at home. To unload that surplus from one district without working a hardship on another district and thereby bringing down the outside market, demonstrates that there should be some code of ethics and working rules among us.

We must realize, that being engaged in one common occupation, we must feel and believe in the brotherhood of man and act accordingly—not as cats, children, wolves or snakes. To frustrate us in these righteous designs, we have the sometimes unscrupulous commission man, many of whom are Jews, Italians or grafters. Even some retail dealers in one's own community sometimes lack that community spirit which makes them realize that fruit growers are producing a home product and that his money is kept at home to be respent among home folks, and that he should be rewarded accordingly.

In shipping to commission men, we have Michigan to compete against, but we have a better grade of fruit than Michigan and should try to get a premium. To date I have always been able to do so.

My analysis and recommendation for procedure, until we all see the light and cooperate is this: In the first place, be honorable and in shipping fruit to another market, be careful not to lower that market, except as the law of supply and demand requires.

Second, do everything possible to hold the market up to a

point where it has to compete with other fruit and still create a demand.

I will say further, there is no danger of the grower getting more than what is coming to him, for at present prices, labor in many cases is not even covered, to say nothing of overhead, taxes, interest and loss of ground while crop is developing. This is most easily done by never cutting the market for the sake of unloading a few cases without the reason that it is founded on supply and demand, and after conferring with the other heavy producers.

Conditions can be further improved by never selling to family trade for less than local retail market, for any man stopping to think can see that we cannot depend on the support of our dealers without we come clean and support them. To distribute to the family trade, we are entitled to that same overhead and delivery charge that the dealer expects. The greatest crime that any grower commits, is to sell out of his yard for the same price that he can get from the store, for this automatically lowers price to that level, as the other growers have to sell to stores at enough lower price to allow dealers to meet competition, and it becomes a case of dog eat dog.

One thing that a lot of us lose sight of is, that if we sell one hundred cases of currants or strawberries for $200, we are not as far ahead, considering the overhead, as to sell eighty cases at $2.50, making our $200 just the same and letting twenty cases rot. In so doing we are fulfilling our part of the obligations in the game. But when we get down among the penny-ante bunch and pick inferior fruit and rush it on the market when the market is full, we are merely keeping the price down, or lowering it, and doing all our own work for nothing, besides cutting the throat of our competitor who should be considered our friend instead of our enemy.

I will cite just one incident that happened last fall, illustrating how one small grower can help hold prices down: Grapes were a fair, square price in Baraboo. Grower, dealer and consumer were satisfied. A farmer with but a few vines advertised grapes at retail at what other growers were getting from dealers. I knew where I could place one hundred baskets in addition to my own crop, and rang this man up to get them, and his reply was that he had but a few baskets and wanted to keep them for his own trade. That man doesn't know what American citizenship

means, and the only way for these kind of growers to be educated is for the larger growers, most of whom I believe are members of this society and are represented here today, is for us who are in this game up to our ears to come clean ourselves and with each other; realize that the consuming public wants our stuff and with the wages they are getting are able to pay for it and must be made to do so. Let us cease being suckers for them to the detriment of our own interests.

I know of growers in my district that are joked about by all their customers for being easy and selling their produce direct from farm at less or only what they can get at stores and then wonder why they are not making any money.

And I am glad to see that the program committee of this society has recognized this aspect of fruit growing and assigned a part of the speakers to that problem.

DISCUSSION OF MR. WOOD'S PAPER

MR. WEBSTER: I would like to ask whether Mr. Wood has got any results from the Redpath? In Minnesota we seem to think that they are the only red raspberry there is nowadays.

MR. WOOD: I have the Latham and I do not want to say one word that would be construed as knocking the Redpath (Latham is the name I know it by), it is a good berry and a fine looking berry, but the point that I make is that the Cuthbert has a superior flavor to the Latham. The Latham has one advantage, that it does not winterkill like the Cuthbert, but one mistake made about the winterkilling—it is really not winterkilling, but spring killing—is that lots of people prune them early in the spring; a cold snap comes and they are killed. They spring kill worse than winterkill. They should be pruned late and that would eliminate some of the complaints of winterkilling of the Cuthbert raspberry. I have both varieties. I pick a few cases of Cuthbert, another grower at Baraboo picks a late kind of fruit and we ship to the same outside markets but I have the preference with the Cuthbert. The Latham is a beautiful berry in the box, it is a picture, but I myself prefer the Cuthbert.

MR. KELLOGG: I would like to ask Mr. Wood what extremes of temperature the Cuthbert will stand without winterkilling? Because of the fact that it does winterkill—or spring kill—it is necessary to protect it if you have extreme temperatures.

MR. WOOD: I plant my fruitbeds to the north and am sheltered somewhat on the east so that any snow has a tendency to drift in and hold the sap back as much as possible. I have some canes on the south side of the hill. I rush my canes there to get them

into the early market and during the recent warm weather the sap started in some of those canes, but not on the Cuthbert. We had lots of snow at Baraboo and the cold spell came on and I think they have winterkilled a little on the tips, that was all.

A MEMBER: I have known Cuthbert for thirty years. They want well drained soil but with lighter subsoil so that you are sure they will receive protection when winter sets in. They have outyielded and sometimes outsold as high as half a dollar the Redpath. If you can grow the Cuthbert I do not think the Redpath comes anywhere near it. It is a little bit hard to pick but on the other hand, the berries are much better than any other variety.

MR. WOOD: When it comes to the fruit, the Cuthbert is my best bet without any question.

A MEMBER: It will outyield anything you ever picked?

MR. WOOD: Yes. Of course I prune close and when the market is flooded it lets me unload my stuff without any trouble. It is the only way we can beat the little fellow and the diversified farmers who fetch in a few cases and don't grade their stuff.

MR. CHRISTENSEN: I think we will have to admit that the Cuthbert is not hardy in certain sections of Wisconsin. As far as quality is concerned I do not think anyone will dispute that it is ahead of anything we grow, but in certain sections it is not hardy and I do not think it should be recommended as the best variety we have for Wisconsin just on that account. I have tried out the Latham and am very much pleased with it. It is somewhat on the order of the old Louden which we grew some years ago but it was hard to pick and the same complaint that I had about the Latham, it is a little soft.

MRS. CULP: Is it wise to use considerable mulch and leaves in the fall in order to hold back your berries coming on early in the spring?

MR. WOOD: That would be along the same line as my planting on the north slope of the hill the ones I want to hold back. In order to keep the frost in the ground and retard them in the spring, well, it would be along the same line, if you wanted to go to the extra labor. That is one thing we must do, we must figure to cut down the labor and expense. The man who has just a little patch takes $75 or $100 worth of berries to town and thinks he is making money but he has not stopped to figure his time or ground, or anything. But when we run it so heavily that we have to hire labor five months of the year, and cultivate them intensively we have to start figuring labor and we have got to cut down the labor cost all we can and get up on the price.

A MEMBER: I would like to have information on some of the best varieties for northern Wisconsin, raspberries and blackber-

ries, too. I have a friend who is contemplating planting raspberries in Oneida county.

MR. WOOD: Plant the Older. It is low growing, stocky. I think they will stand the winter better in Oneida county than in the southern part of the state. You get the early snowfall and it stays there.

MR. CHRISTENSEN: What is the hardiest black raspberry?

MR. HAUSER: When we get the early snowfall in the northern part of the state and where it stays late in the spring, covering the canes, I think any of the black raspberries are satisfactory. But you should lay them down so as to get them covered with the snowfall. Where they are under the snow we have no trouble. With late raspberries we are partial to the Baldwin. We have several different varieties but the Baldwin has the preference with us, I think. It is a hardy berry and seems to grow a larger cane than in other parts of the state.

MR. WOOD: I know, in going up in the northern part of the state this summer, I called on some of the men who bought Cumberland and Cuthbert of me, they were getting along nicely with them but the Older in open places was better.

A MEMBER: There is a peculiar dark color to the canes. No others have it but I have noticed that these canes that seem to have a dark color to the stem seem to be able to stand the frost better. You take a yellow raspberry, it cannot stand the frost. The lighter the cane the more tender. These scientific fellows will probably tell you that these cells of protoplasm are thinner in light colors and will not stand the cold.

MR. CHRISTENSEN: In that case the negro ought to be up at the north pole.

LAST SPEAKER AGAIN: Yes, but that is the exception that proves the rule.

MR. CHRISTENSEN: Well the Esquimaux is almost as dark.

STRAWBERRIES

By J. E. LEVERICH

What little success I may have attained as a grower of small fruits, has been due to a thorough training and personal observation, coupled with practical experience I have gained in the supervision and care of from five to fifteen acres of strawberries each year ever since I have been large enough to be in the strawberry field, and the methods and practices which I am about to recommend and explain are those which have been thoroughly tried out and which I practice at the present time and will continue to do so, until I find or hear of something better. They have been found practical, if not always theoretical.

Statistics will show that there are many people now trying to grow strawberries, who are new at the game, and many of whom have had poor success simply because they did not know anything about the business, trusting to luck alone to bring on the crop. As a result of this lack of knowledge, they have blamed the nurseryman or grower who sold them the plants for being the cause of their failure, when as a matter-of-fact, it was due to their own ignorance and inexperience in selecting the right varieties and then giving them the proper care.

There are several important factors which enter into the successful growing of strawberries.

1. Selection of location and soil suitable for strawberries.
2. Preparation of soil.
3. Selection of varieties adapted to the particular section you are in.
4. Planting good plants, at right time and setting properly.
5. Proper cultivation methods.
6. Winter and summer protection.
7. Harvesting the crop.

LOCATION AND SOIL

Many types of soil will grow strawberries. If I had my choice I would choose new land, but as this is not to be had in most instances, a sandy loam with a clay subsoil, just rolling enough to afford good surface and natural drainage is to be preferred, al-

though most any type of soil will grow strawberries. If you desire early berries, select a south slope, if late, select a piece of land gently sloping to the north. At any rate, do not set strawberries on a piece of land where water stands for any length of time, as the constant freezing and thawing will winterkill the plants.

SOIL PREPARATION

Starting in with a piece of meadow land, for instance, we plow, top dress with barnyard manure and plant to corn. The following year we practice the same method, by again top-dressing with manure and planting to either corn or potatoes. By cultivating the land for two years in succession, the weeds and June grass have been killed. We have gotten rid of the white grub which is likely to bother during the hot summer months, had we planted to strawberries the first year. After two years of intense cultivation of the corn and potato crops, we fall plow from eight to ten inches deep, and if a crop of corn has been grown the preceding year, we disk up the stubble before plowing. At any rate, a first-class job of plowing is necessary. Before the ground thaws out in the spring, we top-dress with about fifteen loads per acre of good barnyard manure, applied with a spreader, and in the spring as soon as the land is fit to work, this manure is thoroughly cut up with a disc and worked in. These three applications of manure have supplied the necessary fertility which is so essential for the growth of the young plants later on. We have also added a large amount of humus and have thus increased the water holding capacity of the soil, and when the spring rains come, the soil is in condition to hold a good supply of moisture which is so essential to the young plants before the summer is over. Continue harrowing the land at various intervals of a week or so apart until ready to plant, being very careful to keep it free from lumps and to prevent it from drying out. Immediately before planting we harrow, disc and spring tooth and harrow until the field is as level as a flower garden and as mellow as an ash heap. If there are hot, drying winds at this time, we roll and harrow after the roller, but in most cases we wait until the plants are set before we roll. In other words, build up the soil and fit it right before you set your plants.

SELECTION OF VARIETIES

Now, after going to all of this work in the preparation of your

soil, if you fail to select the varieties adapted to your particular section, the work is wasted. Plant nothing but the standard varieties in your strawberry field. Nine times out of ten the new and untried varieties will be failures. True, you may get an extra nice stand of vines, they may blossom full, but in about three weeks after blossoming you will go out in your nice field of strawberries of which you are so proud, but the berries you expected to see will be scattering and you will be greatly disappointed. Let somebody else take the chances with new varieties if they wish to. It is better to try out these new varieties in a plant bed set aside for that purpose; then if they prove worthy of a place in your regular field, you will not be doomed to disappointment, as you would have been had you set an acre or two, cared for them all summer, and got nothing for your work only the experience. Therefore, *insist* that your plants are *true* to *name,* and to make sure you are getting what you want, buy only from responsible persons. Varieties that will do well in one section will be total failures in others. To illustrate the above: A certain man whose place I have to pass every time I go to Sparta, decided he would try his hand at growing strawberries. He fitted his ground in fine shape, set the plants on time, and they all grew. He cultivated and hoed them, and every one passing by admired his fine patch of berries. They were always free from weeds and properly cared for. In fact, I dare say that when fall came he had one of the nicest two-acre fields of plants in the state. He covered them with straw in the fall, and in the spring they looked just fine and blossomed full. A short time later as I was passing by, this man asked me to go into his field and tell him what I thought of his outlook for a crop. Imagine his surprise when I told him he would have not over 25 per cent of a crop. His plants were not true to name. The variety he had planted were not adapted to that locality. He had most all of his work for nothing.

Another common mistake among amateur growers is planting imperfect varieties, and as a result the berries will be small and nubby. When an imperfect variety is planted, for instance, the Warfield, always plant a self-fertilizing variety such as Dunlap near them.

I think it is safe to recommend the old Warfield and Dunlap varieties for all parts of Wisconsin, although in the Sparta section the Pocomoke is gradually replacing the Dunlap, and many

growers are setting solid fields of Pocomoke. Of course there are many other good varieties. I believe every section and kind of soil has varieties best adapted to it, although the varieties I have named will do well in most sections, especially in our Sparta section. In our 15-acre field we fruit very few Dunlap, as they do not produce as heavy as the Pocomoke. At the present time our planting consists of one-third Pocomoke and two-thirds Warfield. We set one row of Pocomoke and two rows of Warfields.

PLANTING

I would recommend planting about May first or earlier, never later than May 15th unless you want to gamble on getting a stand. Plants set early get the benefit of the early spring rains. If the year happens to be a fairly wet year, you may come out all right with late planting. When setting in numbers that warrant it, I would recommend the use of the two-horse planter, as the surest and easiest way of getting a stand of plants. Plant in the row about 21 inches apart in rows 4 feet wide. Be sure to get plenty of water with each plant, as the water is very essential when a planter is used. Without it 75 per cent of your plants will die. We use about one barrel of water for every one thousand plants set.

Soak all roots immediately before planting. Be the season wet or dry, the water goes in with the plants just the same. We have found that plants set with the planter, and where plenty of water has been used, will stand a dry season as well, if not better, than those set by hand, and I still recommend the planter as the surest means of getting a good stand of strawberry plants. However, when it becomes necessary to plant by hand, the following method may be used: Thoroughly wet the roots immediately before planting. Place a spade in the ground about six inches deep, nearly perpendicular, and push the handle from you. Shake out and spread the roots of the plant and place them full length in the hole back of the spade. Remove the spade and fill in with fine dirt and press dirt with your foot. Refill the hole and tramp on all sides. You will not damage the root by tramping. Be sure to tramp the soil firmly around the roots and also place one-quarter of an inch of fine loose soil on top of tramped dirt as a dust mulch.

A good test for setting plants right is this: After the plant is set, take hold of a leaf and pull; if the leaf stem breaks and

leaves the plant in the ground they are set all right; if the plant pulls out, they are poorly set and you must firm the dirt more around the roots. This is the reason many plants die or show weak growth, for if dry at planting time the air gets to the roots and dries them out before they commence to grow. If the season is wet, they come out all right, but don't take the chance. If you don't set them right, leave them out of the ground entirely, then you won't be disappointed later on.

Grow your own plants when possible to do so, and set the best possible to obtain. You cannot afford to take chances with any other kind other than good ones. Set all plants immediately after they are dug and sorted when possible to do so. If at the time of planting the ground is very dry (and that is when a planter will work the best) immediately roll the ground with a light roller after the plants are set. This rolling presses down the ridge left by the planter in the plant rows and presses the dirt more firmly around the plants. Contrary to general belief, this rolling does not injure the plants in the least but is a great help in keeping the roots from drying out at this time.

CULTIVATION METHODS

A week or so after planting, or after the first rain, with a light wooden spike-tooth harrow, harrow the field lengthwise, and if the ground is very hard, harrow it crosswise. This will break up the crust that is bound to form, and kill a large number of the early weeds, and loosens the soil around the plants, and saves much hoeing. It also scratches the dirt from the top of the crowns of the plants that have been planted a little too deep, or have been covered by rolling. When doing this, care must be exercised to keep the harrow teeth free from straw and other rubbish. A very few plants will be injured in this process.

Cultivate every week after the first two weeks until about September first, or later if necessary, and keep the soil in a loose, mellow condition. As soon as the blossoms are out on the new plants, they should be picked off and no berries permitted to form the first season, and thus weaken the plants. Cultivate as close as possible without injuring them, and permit no weeds to grow whatever. A sulky cultivator can be used, although at times a spike-tooth cultivator is best.

After the plants have a good start they should be hoed, using great care not to disturb the roots, and to uncover all crowns.

As soon as they start to send out runners, they are trained by cultivating and hoeing to form a matted row, and as the number of runners and new plants increase, the cultivator is narrowed a few inches each time. The row must be kept intact and not allowed to spread too rapidly, or the plants will be too thin.

At the next hoeing, the runners should be placed and trained to fill all vacant spaces in the row, and during an ordinary season if this method of gradually allowing the row to grow wider is followed, when fall comes, you will have a good wide row with a space of from ten to twelve inches between each row. From this time on until it becomes too cold for further plant growth, cultivate to prevent the rows from coming together, using for this purpose a spike-tooth cultivator, set as narrow as possible.

PROVIDE WINTER AND SUMMER PROTECTION

As soon as the ground is frozen, cover with straw, using about two tons per acre. It will pay you to cover the old bed with straw or clover hullings, or coarse manure will make a good covering. When covering, be very careful to place the straw just thick enough to hide the vines from view. Do not cover too thick, as it will smother the plants in the spring if left on too long, and will also be too bulky a mass to tread between the rows when they are uncovered.

This covering should be left on in the spring as long as the growth of vines will permit without injury to them, unless you wish early berries, and are willing to take chances on a late frost which we have to watch out for. Let the weather decide the time. A great many of the plants will grow through the straw if it has been put on properly. However, about the last of April, all surplus straw should be raked off and tramped in the path between the rows. This serves as a mulch and is very beneficial in case of a dry spell during the picking season, or in case of heavy rains, as it keeps the berries free from mud and sand which is absolutely essential if you are to get a good price for the fruit. In other words, don't grow strawberries unless you cover them with straw or some other suitable covering. You must bear in mind there are other important reasons for covering strawberries besides the winter protection.

HARVESTING THE CROP

It is at this time that great care must be exercised and this is a time when many growers fail, being unable to get the berries

picked on time, and consequently market an inferior grade of fruit, the berries being too ripe and soft. Keep your berries picked daily, and do not allow them to get over-ripe on the vines before you pick them. If you see that you are liable to get behind with the picking, don't wait until this is a stern reality, but get busy and hunt up some extra pickers, who can usually be secured for a few days, if you hustle around and find them. Have your pickers engaged before you need them, and when the season starts you will be equal to the task of getting them to market in good condition, and thus command a good price.

Berries that are to be shipped should be picked about three-fourths colored, depending on the stage of the season. They should be packed in cases immediately after they are picked. Give the buyer an honest pack and see that all boxes are well filled so that your customers will be satisfied. In short, employ every possible means to get the berries to market in good condition, for you cannot get the top prices for your fruit unless you do your part, and furnish the grade of fruit that the trade demands, and which will carry safely to distant points.

In our case we have a set of rules printed on the tickets for the pickers to follow in regard to picking, and we employ a field superintendent who does nothing but see that these rules are enforced, and sees that the berries are picked reasonably clean from the vines. These rules are as follows:

RULES FOR PICKERS

"On entering the field each day be sure you come with the intention of working. Children as well as older pickers must work. No playing will be allowed in the field. Take rows as you come to them and pick them CLEAN. Remember that if ALL ripe berries are not picked, at the next picking they are too ripe, and cause the berries picked at that time to be sold for 50 cents per case less on the market. Rows not picked clean must be re-picked by the pickers that have picked the same.

"Pick the berries without long stems but leave ALL hulls on the berries. Do not get dirt and leaves mixed up with the berries. Put no berries in your box that you would not wish to eat yourself. Do not pick green berries. Strawberries must be three-fourths colored; red and black raspberries and blackberries ALL colored. Be sure and fill boxes full.

"Be careful and not step on the strawberry vines as it ruins

them for future picking. Do not cross the rows in the field but follow them to the end or alleys. It will be expected that pickers who commence to pick will continue until the end of the season unless excused by the proprietor.

"One-half of one cent per quart will be deducted from all tickets for berries picked by pickers who leave before the season is over, unless allowed to go before by the proprietor. One-fifth of the pay for all tickets will be retained until the end of the season. Full tickets cashed Saturday afternoons. These rules have now been adopted by Sparta Produce Exchange."

RENEWING THE BED

As soon as the crop is harvested, the field should be mowed and the vines left on the ground to act as a mulch. I do not recommend burning. The mower is set to cut about three inches high. The field is also clipped again a month or so later. This time cut about five inches high, which is merely to cut off the weeds.

Soon after the first moving, take a spring-tooth sulky cultivator which is regulated by taking the inside and outside teeth off from each gang. The gangs are made fast by fastening a two-by-four between them at the proper place. This makes the center of the teeth about four feet wide. It leaves the old row about three feet wide. We have tried all kinds of tools with which to cultivate out an old bed, but this is the best method I know of. The continual spring of the teeth clears them from the vines and mulch that all other cultivators we have tried will collect. After cultivation, the field is leveled with a harrow.

That is all the labor we put on an old bed. No hand work is done in any manner, although if you have the time it may pay you to do this.

YIELD PER ACRE

The number of crates that you can expect per acre varies, due to the season, condition of the soil, and many other things will govern. In an ordinary year, the yield will run from 150 to 250 crates per acre. We have had an average of 300 crates per acre on a 14-acre field, 6 acres of which were one-year-old beds, with an average yield of 425 crates per acre; 4 acres of two-year-old beds with an average yield of 275 crates per acre; and 4 acres of three-year-old beds with an average yield of 210 crates per acre. The largest yield we ever had was at the rate of 630 crates per

acre. You will note in giving these figures, I quote the yield from a three-year-old bed. It is only very rare that we ever keep a bed longer than the second year unless it is free from weeds and grass, which was true in this case.

In conclusion, I will say that commercial strawberry growing, on a large scale, requires much work and means long hours, and some worry during the picking season. If the prospective grower is willing to accept these conditions, there is much pleasure to be derived and profit to be gained after all.

DISCUSSION OF MR. LEVERICH'S PAPER

A Symposium

A MEMBER: I would like to ask what the terrible variety of strawberry was that the man planted in the field and which did not yield anything.

MR. LEVERICH: I was not able to tell.

A MEMBER: Couldn't you tell after they came to bearing?

MR. LEVERICH: I could not tell then.

A MEMBER: Wasn't you there after they came into bearing?

MR. LEVERICH: I was not there. He had some other varieties, like Dunlap, Pocomoke and Warfield, in another field which were loaded with berries, but on this particular kind there were only three or four berries on a plant.

A MEMBER: Didn't he tell you what they were?

MR. LEVERICH: He did not know. He bought them from his next door neighbor who was selling plants. They did not know what they were, nor care. They were just strawberry plants and he did not know anything about it and was fooled into it. The best rule, I should say, for anyone going into the business for the first time is to look around and find what will do the best in that particular neighborhood. What will do best in one section may be a total failure in others. If there are new varieties let him go ahead and try the varieties; if he finds some that will do exceptionally well let him go ahead and try them.

HEALTH PROBLEMS FOR THE FRUIT GROWER

PROF. L. K. JONES

Your secretary has asked me to present to you in a brief way some of the fundamental principles that are involved in keeping the Wisconsin orchards healthy. Now, I have heard already that this meeting is primarily small fruits. A large number of things which I may say will be applicable to small fruits as well as to orchards, although the paper is based primarily upon keeping the Wisconsin orchard healthy.

Many of the things which I say might seem ordinary and simple to a large number of those present but we must keep in mind that the ordinary and simple things are often the foundation upon which success in any enterprise is based. We often overlook the ordinary and simple things and become careless so that it is necessary to name them and to make a survey so as to bring them back before us so that we will be in better position to form a foundation. There is no doubt, I believe, that you will grant that the first fundamental principle in starting an orchard as well as a small fruit planting is to start it right. Now, you will ask, what do I mean by starting it right? In order to answer this question it will be necessary for me to discuss two things in more detail. The first is the obtaining of healthy stock. We cannot always tell the exact health of the plants which we obtain, but there are certain apparent injuries which we can guard against. Crown gall, which manifests itself as large, knotty or hairy growths on the main roots and at the crown of the trees. Trees showing these symptoms should not be used for planting. From our present knowledge of the crown gall trouble it is not advisable to plant such trees. In the case of small fruits it would be advisable also to obtain fruits as nearly free from crown gall infection as is possible. Oftentimes trees which are obtained from nurseries have what is known as black heart. This is an extreme winter injury condition which often comes in the nursery through the fact that some nurseries leave their trees out over winter. The interior of the stalk and larger branches is killed, leaving only a small amount of green live tissue on the

exterior. It is true that such trees may live, may produce for many years, but one cannot expect to produce the most healthy, vigorous-growing type of an orchard by using such stock; therefore, I caution you to carefully examine your nursery stock to see that it does not contain the black heart condition.

After we have the orchard planted or have obtained the healthy nursery stock the next proposition is to keep it healthy. Most of you people will appreciate the fact that animal husbandmen lay a great deal of stress on the fact that young growing stock in the animal kingdom must be kept in as healthy and vigorous condition as possible by proper nutrition and care. This is one thing which the orchardist, to a large extent, has yet to learn; that is, that in order to produce trees and orchards he must keep in mind that the start the trees have in life has a great deal to do with the future problems. As is the case that low vitality often presupposes a person to disease, so it is often the case with trees, and I wish that the Wisconsin horticulturists would keep that in mind. A tree which is planted in a small hole, just large enough to hold the root system, in hard, stony ground, has a very poor chance in life, as compared with one which is planted in loose, well-cultivated land.

I might also say something at this time relative to spacing your trees. Oftentimes the trees are placed too close together, which makes it impossible to properly cultivate the orchard or to carry or transport spraying apparatus through the orchard without unduly wounding the trees. I have in mind a statement made to me this last season by an orchardist who stated that if he were planting his orchard over again he would be willing to pay twice the market value of the trees in order to obtain the best trees possible and also that he would supervise the planting of every tree and know that it was planted in the best condition. Now that statement was based primarily on the fact that a large number of his trees were unhealthy, due primarily to a poor start in life. If we have the orchard started in a healthy condition and we continue to keep it healthy there are many things which might be done and I hope you will pardon my lack of detailed discussion when I go over these following paragraphs. One of the main things to keep in mind is proper pruning. First, we must avoid making unnecessary cuts by carelessly handling the pruning tools. Second, in making large cuts, make the cuts as close to the other branches as possible in order that the natural heal-

ing may take place, and; Third, in the case of large cuts, put on some flexible covering, such as asphaltum paint. All of these precautionary measures are stated due to the fact that any wound in a tree which does not heal over is a very good place for the entrance of rots, etc., therefore we must do our best to keep the wounds covered so that unhealthy conditions will not prevail.

Next, we must prevent the entrance of diseases. Some diseases may enter plants through the healthy tissue. We have already covered the entrance of diseases through wounded tissue and I want to impress upon you the fact that spraying for the control of disease is a preventive measure and not a cure as it does not stop further development after disease is present.

We should all be optimists in Wisconsin from a standpoint of fruit growing. True, we have to combat such diseases as scab, fireblight, rust, codling moth and, in the cherry and plum, we have the leaf spot disease, plum rot and plum curculio; but we have relatively few diseases to compete with as compared with other sections of the United States where they have such diseases as the black rot, blister canker, bitter rot, mildew on the apple as well as the apple maggot and red bug and fruit mite. Some of those diseases are almost impossible to control, while the diseases in Wisconsin are mostly readily controlled by spraying. So that when we look over the list of diseases that we have and compare them with other parts of the country we should develop a feeling of optimism.

In spraying I want to emphasize the necessity of care and thoughtfulness in application. Spraying which is put on in a careless manner may be of little value in the control of disease or it may control the disease down to say 25 per cent of the crop, while sprays put on in a thorough manner will usually control Wisconsin diseases down to 10 per cent of the crop, so that there is only 5 to 10 per cent of the crop which is unmarketable. As is the case in many business enterprises, that last 15 or 20 per cent which is gained by thorough application is often the percentage of our profits. Many small orchardists and farmers who have home orchards will contend that they cannot afford to buy spraying equipment to spray their trees. I feel, therefore, that the big solution of such problems is the organization of spray rings under the competent management of some grower or the county agent.

Does the keeping of your orchard healthy pay? From the

standpoint of small fruits I will say that work which has been done in the past years at Wisconsin has shown, for instance, that the spraying of black raspberries has increased the fruit yield over one-third; further, I am emphasizing this fact by citing you some of the reports of the spray rings of last season. We have in one case a report from a man who has 200 trees. He applied five sprays last season—that is, five on the large varieties and only four on the early varieties—at a total cost of $75 (that is labor and materials) and marketed $1,280 worth of fruit. Now what did that mean? It is better emphasized by the next instance which I will cite. Another grower has 85 trees; in the past it has been practically impossible for him to produce enough fruit for his own use from those 85 trees. Last season he applied four spray applications at a cost of $32.50 (that is labor and materials) and marketed $400 worth of fruit.

Now, I have not discussed any particular diseases of fruits but should be glad to take them up with you if you wish to ask about them at this time.

DISCUSSION

MR. CHRISTENSEN: We are glad to have the opportunity of having Professor Jones with us and I know all of you have encountered problems when you wished you had somebody who was an authority on them whom you might ask.

MR. MOYLE: I know this year we had an uncommonly large number of wormy apples, especially Northwestern Greenings. They did not seem to be the early crop of worms, or at least they did not come on normally. What was the cause of that?

MR. JONES: What time did the worms appear?

MR. MOYLE: We noticed them the latter part of July.

MR. JONES: Well, that was probably the first brood. The way we have been recommending sprays in the past, the spray which is applied ten days after the calyx spray, is not applied late enough to get the first brood in Wisconsin. We are in hopes in the future to recommend the application of that spray about eighteen to twenty days after the calyx spray time, in hopes that the arsenate of lead will be there in larger quantities to get the first brood of the codling moth.

MR. MOYLE: Really should have five sprays to be worth while?

MR. JONES: Yes. If you are bothered with the codling moth it would be best to put on the fifth spray about the first of August.

A MEMBER: When it is real hot what are you going to do? Cut it down one-half or use Bordeaux?

MR. JONES: Use Bordeaux. I would not cut down lime-sulfur one-half. You are not taking any more chances with the full strength than with the half strength. You can use Bordeaux with the calyx spray and you can use Bordeaux in the summer time without much injury to the fruit, although the Bordeaux is likely to cause some degree of defoliation and some injury to the fruit. We have found that one is safe in applying lime-sulfur providing the temperature does not reach 90 degrees, but but if it reaches 90 degrees even nine days after the spray is applied, it may cause some burning. If you are applying lime-sulfur it would be my advice not to apply it if the temperature is 80 or 85 degrees and shows any signs of going up, but you can use Bordeaux mixture in those cases.

MR. MOYLE: In the case of an amateur or novice in this game, would it be all right, correct, to tell him to spray the first of every month the summer through?

MR. JONES: No, that is not true. The first of every month would not be just the proper times.

MR. JONES: If you do it that way you probably will be disappointed. The larger number of those five sprays must be applied in the first month. That is from a standpoint of scab. I wish I could tell you exactly how to do it with perfect satisfaction but if a person has any number of trees it will pay them to study carefully the work which has been done to show when the spraying should be applied. That is, sprays which are not applied at the right time are oftentimes of little or no value. The thing to do is to make a careful study of the different diseases which you have and apply your sprays as carefully as you can.

A MEMBER: Does that sludge in the bottom of the spray tank, if you run it out closely, is it apt to burn the leaves?

MR. JONES: Sometimes it does. It is largely a mixture of arsenate of lead with lime-sulfur. In order to get away from such things it is advisable to put your arsenate of lead in a bucket of water before you put it into your spray tank. Don't throw it in dry. I would put both dry lime-sulfur and the arsenate of lead in suspension in a bucket of water before putting it in the spray tank.

A MEMBER: Don't you get a greater suspension of arsenate of lead in the spray tank?

MR. JONES: I have not experienced that.

A MEMBER: If you have a good mixer in the tank, what is the difference?

MR. JONES: The arsenate of lead is liable to form lumps and go directly to the bottom of the tank. It does not mix as well as if put in suspension in a bucket of water before putting in the tank.

A MEMBER: What about spraying strawberries?

MR. JONES: There are only two reasons in this state for spraying strawberries; one is the leaf roller; the other is the leaf spot. As I have seen it the leaf spot is not particularly troublesome but you often have to spray for the leaf roller.

A MEMBER: To what percentage can you control leaf roller with sprays?

MR. JONES: If you put it on early, using 1½ pounds arsenate of lead to a barrel of water, you should be able to control leaf rollers, but it requires careful application early in the season before the leaves become rolled.

A MEMBER: How are you going to get away from the condition that the leaf roller does his worst damage on the new leaves? You would have to do your spraying there every month.

MR. JONES: It is my pleasure to get the leaf rollers early in the season before it becomes rolled up to any extent inside the leaves. It may be advisable also to apply or add to an arsenate of lead spray a preparation to make it spread. There are several preparations on the market such as Kayso, etc.

A MEMBER: In spraying raspberries would you advise lime-sulfur?

MR. JONES: Lime-sulfur, using the dormant strength one to ten just after one to three leaves have unfolded on the canes in the spring.

A MEMBER: Won't that defoliate all the leaves?

MR. JONES: It will not. Black raspberries I am speaking of.

A MEMBER: What is this spot on the red raspberry?

MR. JONES: That is spur blight and as far as I can see there is only one place in the state where it is of sufficient importance to warrant spraying; that is at Bayfield.

Wednesday Afternoon

MR. CHRISTENSEN: We want to open our discussion this afternoon with an interesting topic. We have had two bountiful crops of apples two years in succession and, while only a few years ago we thought we might not have ever again a surplus of

apples, we find that it is now rather difficult to dispose of some of them. We have now started our spray rings and a great many of our farm orchards have begun to yield bountifully and the disposal of this product has now become a problem. We will open the discussion with Mr. Hale's paper.

DISPOSING OF SPRAY RING FRUIT

G. S. HALES, *County Agricultural Agent,* Ozaukee County

The purpose of this brief discussion on disposing of the spray ring fruit is not to make public some new and startling methods, but to describe the methods of marketing in Ozaukee county. The conditions obtained here may or may not apply to other apple producing sections. The spray ring work in this county has started slowly, and it is felt that it is on a sound basis.

The locality of which I speak, and with which I am familiar, lies immediately north of Milwaukee adjoining Milwaukee county. The most distant point in Ozaukee county from the central part of the city of Milwaukee is about forty-two miles, and the nearest about nine miles. All of the county is within easy trucking distance, and by far the greater part of the produce is disposed of in this manner.

The city of Milwaukee furnishes several types of markets including the public market places, the large grocery stores taking several truckloads of apples at a time, and the opportunity of selling from house to house.

The larger growers selling on the public market usually rent a stall or booth in order to facilitate the disposal of their product. It being located in the same place day after day, and even for years at a time, the buyers learn to know them and to depend upon their products. The grower with poor fruit does not last. At this market it is often possible to contract for a truckload of a certain kind of apples to be delivered at some time other than on a regular market day. Albert Rowe of Thiensville, a grower having five acres of 16-year-old apple trees, disposed of two-thirds (all that was offered) of his crop on this market at $1.50 per bushel. Wm. Prochnow of Cedarburg disposed of his entire crop at this same market at $2.00 per bushel, and handled all the good quality apples his neighbors could supply. Henry Peul of Cedarburg marketed 225 bushels from twenty-one trees, and received the very good price of better than $1.75 a bushel.

One farmer near Cedarburg, who has about four acres of matured trees, has depended almost solely upon the larger grocery stores as a market. In order to come in on this market considerable quantities of one variety must be available.

At certain times the house to house marketing in Milwaukee is very profitable. Last fall the Yellow Transparent, Early Red Bird and the Red Astrachan brought $1.00 a peck for a period of about ten days.

Local markets have not proved satisfactory at any time. The custom of local merchants to trade in farm produce and take whatever comes, without any particular attention to grade, has resulted in so low a price that the farmer with good fruit cannot afford to dispose of his product in this manner.

The produce manager and the senior partner of the largest store in Port Washington told me yesterday that they handle a considerable amount of local produce but that they could pay only 1½ or 2 cents per pound because of the very inferior quality. He deplored the fact that he was compelled (or thought he was) to take the apples that the store's customers brought in. He made the statement that he thought if the local apples were good quality his store would not need to handle outside apples at all. Beyond question, this situation will be changed with the result that good quality local produce will be sold locally.

Some attempts have been made in roadside selling. Mr. Rowe has a select trade that calls at his farm and takes approximately one-third of his crop at a price equal or better than he can obtain in Milwaukee. This is the result of several years' selling in Milwaukee, however, and probably cannot be used as a general market indication.

A farmer adjoining the city of Port Washington set up a roadside market on a State Trunk Highway and disposed of considerable fruit. This plan will work out only on a very busy highway and certain accommodations must be made for the cars so that it is not necessary for them to stop on the highway. The number of passenger cars on this particular highway was 3,360 on Sunday, August 15th, and 3,689 on Labor Day, according to the count made by the Highway Commissioner.

Another type of market that is being used is the local private market for the late fall and winter apples. Wm. Schuknecht, Clerk of Circuit Court, produced about 40 bushels more of good fruit on eight trees than he needed for his own use. These he

kept in a cool cellar until about December 15th, when he disposed of them for $85.00. He states that he could have sold several times as many.

OBSERVATIONS RELATIVE TO SPRAY RINGS

1. Clean, graded fruit moves.
2. It has been more difficult to produce good fruit than to dispose of it.
3. Every farmer, even though he has good trees, will not put the time and care upon them that is necessary to produce good fruit.
4. Power spray outfits are more satisfactory and cheaper than hand outfits.
5. Probably every type of market can be greatly enlarged.
6. A great prejudice against home grown fruit (probably justified) and must be overcome.

MARKETING THE SPRAY RING CROPS

Symposium

W. A. TOOLE

Mr. President, Ladies and Gentlemen: We have no county agent in Sauk county and no spray rings, but we have a great many of the small farm orchards and it is from the standpoint of marketing these small crops that are incidental to other business that I will speak. It is practically the same thing in many ways as we recommend to do in the spray ring proposition. In our own case we had this year two small orchards, one of our own and one rented. One was sprayed by Mr. Bassett and the other by Mr. Irish and the results in both cases were fairly good apples. We had this one trouble that is prevalent all through the region around Baraboo, and that is, too many varieties of the kinds that are not readily salable; that is, kinds that are not on the market. In our own orchard we have thirty to forty kinds, two or three trees of a kind. That makes it difficult to market them because there are not enough of any one kind to cut any figure in a commercial way.

Just as a preliminary to what I have to say I will read a few paragraphs that I noticed in Printers' Ink, an advertising maga-

zine. This is in their editorial department. It does not relate directly to what we have to say but I think it will be of interest.

"Producers, not consumers, need to be taught.

"At an exposition of eastern grown fruit held in New York City a short time ago we were impressed with the beauty and quality of the exhibited fruit, with the perfection of the packs and with the splendid way the grades had been standardized.

"But we could not help thinking that this exhibit was not reaching the right audience. It should have been shown to fruit growers rather than to fruit consumers. Consumers are already 'sold' on fine fruit, of standard grade and pack. Consumers have learned from sad experience that eastern grown fruit cannot be regularly obtained in the brands, grades and packs that were exhibited.

"If growers had attended this exhibit they would have been shown in just what way the consumer likes to buy fruit. To be sure, many growers did attend this fruit fair in New York, but here again it was largely the progressive class that attended—the class that is packing its fruit properly.

"We have often said that there is no conspiracy in the markets against eastern fruits in favor of western grown fruit. Every fruit connoisseur knows that eastern grown apples are as good as western apples. The western fruit, however, has been winning the preference in eastern markets simply because it is packed and graded in accordance with the desires of the consumer. Eastern growers have, themselves, made wonderful progress in this same direction these last half dozen years, but there is still vast room for improvement.

"One of the obstacles in the path of the eastern grower is too many varieties. Last year, we understand, the New York Fruit Growers' Co-operative Packing Association, Inc., marketed some 140 varieties. Pooling and co-operative selling is most difficult with such a hodge-podge collection.

"One of the first things, therefore, the eastern grower should do is to standardize the grades, then pack properly and then advertise effectively. This particular exposition was supposed to be an advertising venture. But whatever advertising effect it had was all over in a week. Now we are right in the heart of the apple-eating season and most of the apple advertising that is appearing is in behalf of western grown brands.

"All things considered, can you blame the consumer for not being so familiar with eastern apples as the merit of the fruit would warrant?"

Now, whether it is New York or Wisconsin, those comments hit pretty much the same right through and whether we are large growers or small ones, I think there is quite a little there that bears on our own conditions.

Now to come back to the Baraboo proposition, there are or-

chards all the way from small farm orchards of a few trees up to some forty to fifty acres. Some have been marketed by the roadside, some locally, some have been shipped direct to consumers outside, some have been sent to commission merchants, and a whole lot of them have gone to waste up there this year. We are no exception, I think, to the general conditions. There were more apples during the summer and early fall than producers seemed to be able to use up before they would spoil, at least with the distribution there was at hand. There are several up there who are using the roadside markets with marked success. Other years it has been most successful but the trouble is the tourists coming up there this year had had all the apples they wanted either at home or before they got there and locally, with a town of only five or six thousand people, we could not hope to dispose of very much of the crop that came on in summer and early fall varieties. Some of it was made up into cider. I presume some of it got a little hard, probably was used that way, but very little inquiry was made if anyone wanted cider, as to what they were going to do with it. Considerable was made into vinegar. The next question is, how to get rid of the vinegar.

It seems that in years like this when people can get all of any commodity they want, they don't seem to want it. I do not know whether that is true, but I believe it is. Locally, the people would get them almost for nothing if they wanted them and they rather resented paying a fair price. You know there is a statement that there is a certain sort of honor among thieves and I was reminded a couple of months ago of that saying. I was delivering apples to a lawyer's wife and she mentioned that at a certain roadside market they were charging too much. She said, "That is all right to charge those high prices to tourists, but not to home folks," and, being a lawyer's wife, I presume she felt that some consideration ought to be given to the family. It was all right to rob the stranger but give the home folks a little bit better deal.

We shipped out quite a few of our apples; some to northern Minnesota; some to Chicago; on a sort of commission basis and I was noticing the statement a few days ago and figuring it out a little bit. One lot of 700 bushels, after paying freight charges, commission charges and all the other charges, left 23½ cents per bushel. These were packed in baskets. The baskets with band on top cost 22 cents. That left 1½ cents for the labor of packing, growing, spraying and all other operations. These

were apples that had been graded—a good grade that were marked Wisconsin Standard B but I believe could well have gone under the Standard A grade. It did not make a great deal of difference what they were marked, because they were sold out to the farmers of northern Minnesota. The trouble was not so much that the price to the consumer was not high enough but that there were too many charges in between. Another lot shipped to Chicago, 166 bushels, brought $95.28, 57⅓ cents a basket. After paying 22 cents for the basket it left 35⅓ cents. There was an additional charge of 5 cents a basket for the people who loaded them at Baraboo, which left net 30½ cents. Those apples sold in Chicago at from 75 cents to $1.50 a basket. The Wolf River brought the highest price. After taking freight, commission, etc., out there was little left for the grower. What we actually paid out for this 166 bushels was a fraction over thirty cents a bushel and they brought 30⅓ cents a bushel to me, so I just got my money back for picking and packing and taking to the train, and nothing for investment.

Mr. Irish has one of these roadside stands and sells quite a few apples and for the sake of stopping the tourists he has a sign several rods each side of his house, "Apples for sale next door," and our place lies across from him and some people coming from the north stopped at our place and told other people; as a consequence we sold quite a lot of apples to people from a county north of us where they are not growing apples. That worked very nicely, but not all the people from that county come down and get their apples and after getting other work cleaned up (we have a little Ford truck which holds about sixteen bushels) we loaded up the truck and went up into that county, it is about forty miles, but pretty good roads, and we disposed of the rest of our crop that way, about 140 bushels. The cost was approximately 45 cents for the wages of the man who did the picking and about 50 cents for the man who did the selling; that made it 90 cents a bushel for the apples. They sold all the way from 75 cents to $2 a bushel, according to the quality, and while it is rather close yet we never realized before how much territory there is up there where they have no apples. They can't grow them because of too light a soil or too wet, and in the future we do not believe we are going to worry very much about marketing the small surplus because we have a market about sixty miles from home where we can market them by trucking. Not at a high price, but

better than shipping to the commission men. Ordinarily a good share of our apples can be moved by the tourists that are going through. Mr. Bassett and Mr. Irish sell a good many that way. The tourists go pretty lively and you have got to use signs to attract them. Mr. Irish uses signs; Mr. Bassett has a very convenient spring. That stops them, and when they are there he uses the chance to sell some apples.

MARKETING THE SPRAY RING CROPS

A Symposium

MR. J. M. COYNER, *County Agricultural Agent*, Jefferson County

I do not know why we county agents are in on this program, but nevertheless, Mr. Secretary, we are glad to be here.

I think that we do have some problems in common. I am not so sure of some things as I was last year when I stood here. I have had some experiences that taught me some things; one of them is this: I was just dead sure last year that we were going to have a short fruit crop and we did not. I am not making any speculation this time. It does not seem possible we could have anything like such a bumper crop as last year but nevertheless, whether we have a small or large crop, we are going to have our selling problems. I come from Jefferson county, as the chairman intimated, about half way between here and Milwaukee. About four years ago we began organizing some community spraying organizations without very much thought of the marketing end of apples, and the farmers went into it with the idea of producing their own fruit and taking care of their home orchards. I think some from sentiment, as much as anything else, did not want to see the old orchard die. And some fellows said that if they got enough for their home use they would be satisfied; just allow the rest to lie on the ground as feed for the chickens and perhaps throw some to the hogs, and would not worry about it; but when they saw those fine apples and no market for them they began to get, as they say down where I was raised, somewhat "het up." We began to look around to see if we could not dispose of some of the fruit. We attempted, and with considerable success, to use the spraying organizations as a selling organiza-

tion, but we found what we think is a better way and while we have not proved it, we think it is going to be more successful than using the spraying association as a selling organization, and that better way is to organize a fruit growers' association. We have somewhere in the neighborhood of a hundred farmers in our spraying association and we are not expecting this coming year to push the organization of spraying associations; we are going to push the marketing end. We do not want to push the production of fruit ahead of the disposition of it, as we feel that is a mistake, and we are planning to organize a Jefferson county fruit growers' association composed of men who can and do have a surplus of marketable varieties. Mr. Cranefield happened to be over at a meeting last summer. We had a grading demonstration and one of the things that I am very thankful to Mr. Cranefield for—it made some of us kind of smart at the time a little bit—but he advised us to cut down all the Transparents. The place we met at had six Transparent trees. He said to cut them down and make firewood of them. Mr. Hales mentioned the fact that they marketed Transparents and Astrachans and the way they are situated I suppose they can do it. We can't. We are too far from a big city and we are not advising anyone to produce Transparents; we are advising them to cut them down, especially when they interfere with the development of some other tree. I believe that the first step in marketing, whether it is private or corporation marketing, is the production of a high quality product. We have in the farm orchards of Jefferson county, I suppose, 50 per cent, maybe more, trees that are not of a high standard variety. They are not a desirable variety and I hope to see those non-standard and undesirable varieties chopped down just as rapidly as I can get them chopped down.

Another thing we must look out for and provide for is this: The man who packs and sells his basket of apples or fruit belonging to that association must absolutely be held accountable for the quality of that pack. If the quality is good the association should have, and through it the member, should have some credit, even though it is very indirect. We are going to provide for that in this way. We had a sort of a general label two years ago and used it with some success on the baskets of the members of the different spraying associations. We had growers' numbers but we did not use them. We did not have any machinery for tracing back and checking back on the producer any fault that

was found with a pack that he put up. We have done some advertising through the county fair. We believe that that is one of the most practical ways of advertising. The past three years now we have had big exhibits of commercial packs, boxes and baskets, and many introduced barrels, and at the fair these samples were sold out. We had something like a hundred bushels for the last three years and I know in Jefferson of at least four instances where the citizens bought a bushel of apples that were fine on top but by the time they got down to the bottom they were something like marbles, and we had no means (we did not have those baskets labeled) of tracing back where the apples came from. I went to these people and satisfied myself that there was some cause for complaint and I am going to see that is made right with those folks, because otherwise they are not going to be very enthusiastic about home grown apples.

Another thing is the advertising of varieties and the fact that the local people and tourists can supply themselves with this good home grown fruit of dependable quality. We think we have partially worked out a solution of that. A committee of ours went to a sign painter to find what he would charge for making nice permanent metal signs. He asked $5 and I guess he would not make more than 75 cents or a dollar on the signs, considering the number of coats he planned to put on, varnish, etc. However, we secured some stencil paper and had him paint just an outline sign in plain letters, "Jefferson County Apple Growers' Association. Sprayed and Graded Apples for Sale Here." For that he charged one dollar, just painting it on paper, did not even paint the card at all. Well, we cut the letters out and one of the men had a wife who was quite a genius and we went to the hardware store and had 25 or 30 of these cut out of sheet metal and painted them white. This took only a couple of hours two afternoons then they were put up in a shed to dry and when they got dry they looked pretty good. His wife took this stencil which we had gotten for a dollar or seventy-five cents, and very much to my surprise, with some paint that she got from the Highway Commission office, she was able to turn out those signs for 75 cents apiece, painted on both sides; and I tell you they did the business. In most cases people put the sign into a frame, had a swinging sign, and painted the frame black. This woman even furnished the frame if they wanted it. That does not look like very expensive advertising.

One fellow had owned a farm for seven years and never picked a basket of apples. He had some wonderfully fine Snow apple trees. He complained that he couldn't sell an apple, couldn't even give them away. He began to sell his apples for a cent a pound for cider. I took one of these signs out there and he would not buy it. I told him I would not only give it to him but I would put it up, and I did. He told me that the following Sunday, (and I was raised a Presbyterian, this may not be very attractive to you), he sold $18 worth of apples that day. I am not going to get into any religious controversy, but I know that apples can be sold at a roadside market on Sunday and it is a very profitable way to sell them.

The next thing that we believe must be done, that we found it necessary to do and have not been able to do yet, is to give better service from several different standpoints. There is absolutely no use to tell some unsuspecting city fellow that he can keep these apples until Christmas or New Years, or February if he has a hot, dry basement. It can't be done. You folks will have some of the experience we had if you load up some of those city fellows when they have not got a satisfactory place to keep them. They will blame it on the apples, every time. That represents a problem, and the way we are trying to get around it is this. We are encouraging the fellows who have no cellars where it is cool and damp and they can keep apples in, not to load up, because there will be an awful comeback later on.

MR. CRANEFIELD:

I do not know whether I am saying anything on the subject or not, but one thing you growers can feel certain of is this: I can speak for the extension force, because I know the college of agriculture, that the production of apples through the farm orchard can be tremendously expanded. That is not what we are trying to do. We are trying to develop the marketing end ahead of the producing and because there is going to be a comeback that is going to be ruinous to the farmer and the city consumer in general if we go too fast on the producing end and I can assure you that we are going to bear down heavy and are going to be bearing down harder on the marketing end of the apple industry.

MR. CHRISTENSEN: Mr. Coyner said he did not know why the county agent was brought in on this marketing proposition. The

county agent is supposed to know everything in connection with agriculture from the cure for a kicking cow to spraying apples and potatoes, etc., and I am sometimes amused up in our county when I hear the things our county agent is expected to do. I imagine he must have forty-eight hours in his day and must know more than Solomon in order to be able to answer all the questions that are fired at him.

Mr. Merriman, of Walworth county, another county agent, is to give us a little talk on this subject.

MARKETING THE SPRAY RING CROPS

A Symposium

L. J. MERRIMAN, *County Agricultural Agent,* Walworth County

I do not know as I can tell you anything different than some of the other speakers have told you but some of our experiences have been slightly different. Walworth is one of the southern counties, bordering Illinois. We are a little far from any large market. We could possibly get to Milwaukee but have not done so with our spray ring fruit. We have four spray rings down there and on the whole they have worked out very successfully. I presume that you men are not all interested in this spray ring proposition but there may be some things that fit your case. We find that the roadside selling works out about the best. We sold a few through our local merchants, but not many, most of the people buying at stores are buying three, four, and five pounds at a time. It takes a good many customers to buy a bushel of apples and when a merchant is selling in that quantity he has to have a better figure also, so we find that the local merchants do not take many apples. We do have a great many tourists, which is the case in most of Wisconsin, and we find that in catering to that trade we can sell a good many. You want a good sign on both sides of your place for roadside selling. A good peck of nice apples might help attract attention. Anything attractive I think will help. Of course, it must be on a good road, and on roads that are good they go right by unless the sign is placed back a ways to warn them. Then you should have a good stand close to the road with a nice lot of fruit on it that they can see, and if you have a place near the stand where

they can drive off the concrete, that helps wonderfully. And I might say that on one road that is a detour this year and which perhaps got more traffic for that reason than ordinarily, because it is not a specially good road, yet the farmers within a distance of two and one-half miles sold between two and three thousand bushels of apples and netted between $1.50 and $2 per bushel. Pretty crude signs many of them used, too, but the crop moved. They found they could sell windfalls to those people at a dollar to a dollar and a quarter a bushel. In fact, where tourists went for apples and they were all sold out, whenever people started picking off the trees the tourists would say, "No, we want some of these on the ground, they are nicer to eat." Some did not even have to pick them, let them fall and sold them that way. They also brought good money.

There were two farmers close together. Neither of those two men had sold any apples outside of a little cider each year. Last year they both sold over $500 worth of apples. Some people in Walworth county sold up to a thousand dollars worth. When you consider how little expense they have to go to to market apples under those conditions it is well worth while. We found there are about six or eight more communities that want spray rings. We are trying to organize those spray rings on main roads or where they can get out to main roads to do this roadside selling. I know they cannot sell to the merchant but if they can get out to the road when the traffic is heavy they can sell. A good many put apples into cider. We have a large regular trade and whether it is consumed while soft I do not know, but a good deal was put into cider.

A good many farmers when they have sprayed, think they have done all. That is important, but only a beginning. One man had several Transparent trees. He was disgusted because he did not get a crop. The trouble was not with spraying. The apples were about the size of walnuts. It was a dry year, trees not fertilized, and you can imagine what he had. Of course he can solve that growing problem by applying fertilizer and thinning his trees. We have done considerable work and these men are still in the spray ring. Those men have learned it is important to spray. Outside of those men who were always behind with their work and did not get their apples picked in time, we have had no comeback. One man had some Duchess and a great many rotted on the ground. He did not say much

but if it had been some farmer he might have kicked a lot, and I might have thought he had a right to if I did not know the conditions. A neighbor with a good deal more Duchess had sold them all, but this man was not on the job; he simply put off the picking of the apples until it was too late. He did not use good business judgment. He was on a cross road but had a splendid place to have a stand about a mile from his house and several children old enough to take charge, one of whom could just as well have had a stand and sold his apples, but I feel that in this proposition where you are anywhere near a main road and use a little common sense in putting up signs, you will have no trouble in moving your apples at a good figure. But there is no question but what a man wants to be sure of his marketing end before he produces too many apples.

MR. CHRISTENSEN: We have just started our spray ring up there and our county agent, Mr. Sell, is here to tell us a little of what has been done up there.

MARKETING THE SPRAY RING CROPS

A Symposium

G. A. SELL, *County Agricultural Agent,* Winnebago County

I do not know why Winnebago county should be brought in at this stage because, as the chairman said, we are in a way, beginners in this spray ring work, we have been at it only one year. After hearing from a county like Jefferson with Mr. Coyner, where they have been at it for three or four years, we realize we are considerably behind them in the development of spray ring work.

We have been at it just one year. We have two spray rings, one power outfit and the other a hand outfit. Both gave very satisfactory results as far as getting clean fruit is concerned. I do not know of any member in either ring who did what he should have done in producing and also grading that had any cause for disappointment on the return on the investment he made in spraying and the work that he did in caring for that fruit. We may be a little more fortunately situated than some of the other counties in that we have several cities that are pretty good consuming centers. We have a good home market

for our apples. We have had no trouble in marketing what was produced right.

One reason our county agricultural committee favored going into some spray ring work was this: There was a lot of fruit coming onto the market that was not in marketable condition and it just spoiled the market for the good fruit. As long as the grocer had a dozen or half a dozen bushels of scabby, gnarly apples setting around that he took in trade from some farmer who did not take care of them, he was not ready to buy anything more, not even Fancy A-1 stuff at any price. That is our theory, that the more good fruit we can get the more will the demand for that fruit be stimulated. This poor, unsprayed, ungraded fruit that has been coming onto our local markets has partly killed the market for good fruit everywhere, checked the market for it, and I am sure that our commercial growers today feel that whatever can be done for spray rings or anything else to get more of this poor trash off our local market it is all going to be a help for everybody that has apples to sell.

About the only place where our folks in the spray rings had any problem in the marketing of their fruit was on the early varieties. I do not know whether we are any less fortunate in having so many early varieties in our county than the rest of the folks or not but we certainly have a lot of Yellow Transparent, Duchess and Astrachan, and it is true that some of our spray ring members did not dispose of all of those early varieties. Another reason for that was that the average farmer that had any number of trees of these early varieties, at the time he should have taken care of them felt that he did not have the time to put on apples; he felt his time was more needed at some other job, so he let them fall. Some of these same people did even then sell those for windfalls. Others who paid more attention to their fruit found quite a ready market as windfalls to the tourist trade and what they could not dispose of in that way they put through the cider mill. One man was a little afraid as to whether he could sell it without having a soft drink license but they called for it so strongly that he let it go. One man put about a hundred bushels of Wealthy windfalls in another man's cellar, he did not have room in his own cellar, and sold at pretty close to a dollar a bushel and said he could have sold more.

The roadside marketing played quite an important part in disposing of our spray ring crops with quite a few of the mem-

bers, even on some roads that are not much of a main road where you would not expect much tourist traffic; but some people got wind that a certain party had nice sprayed fruit, perhaps by peddling in town, and those with cars would come out from town even on the side roads ten or twelve miles from the city, to get that kind of fruit, and there is not a member in our two spray rings that I know of that now has a single bushel of apples to sell. About the middle of November some of them had some left but they were good varieties and they were moving at that time and they are all gone now. I think we averaged pretty close to $1.25 a bushel on all our spray ring apples and that included a lot of Wealthy and early varieties. A lot of that was clear. With this roadside marketing or farm marketing, where people came and brought their baskets or sacks and even dumped them into cars, there was no expense for containers.

After the experience we have had this year it looks to us in Winnebago county, as though the problem is not so much to sell the good apple as to produce good ones. Keep the poor stuff off the market and I am sure there will be a good demand for the right kind of apples in our county.

MR. CHRISTENSEN: Those of you who attended the summer meeting of the Wisconsin Horticultural Society at La Crosse, saw what Mr. Spreiter had done in the way of spray rings there just at the time the Duchess were ripening, and today he will tell us how they disposed of their apples up there.

MARKETING THE SPRAY RING CROPS

A Symposium

W. E. SPREITER, *County Agricultural Agent,* La Crosse County

We do not have any definite marketing plan. As you know, many of the farmers around La Crosse are milk haulers and there is a good deal of trucking and pretty near all of them sold their fruit as a peddle proposition to the stores. I did think last spring that we would have a lot of trouble in selling the fruit, but I am glad to state that those who had good apples have sold their apples. Men as much as 18, 19 and in fact 25 miles out of the city of La Crosse that never sold an apple in their lives until this year sold as high as $250 dollars worth just as a side

income at small stations, in the city of La Crosse, at Bangor and at West Salem.

I remember one man who went down there with about six bushels of apples. He went into a store to sell them and the storekeeper said, "We have got more than we can handle. The windows are full." Sure enough, the window was full of apples brought in by people who did not spray and the merchant could not handle them. This farmer happened to be a pretty good salesman and he began cutting these apples open and every third one, just about, was wormy and he told the merchant he would give him all the apples in his wagon if he could find a wormy one; and he sold them at a dollar a bushel.

I am sorry we have not a real marketing plan. The thing that ails our market in La Crosse is the wholesale dealer shipping in from other sources. He can buy them so cheap that they can sell them in La Crosse cheaper than our people at home are willing to sell them. Mr. Webster, of La Crescent, is here and I believe he could tell you more about marketing apples than I can. He has marketed thousands and thousands of dollars worth of apples and before this convention is over I hope we will hear from him about this marketing proposition.

DISCUSSION

MR. CHRISTENSEN: Mr. Kuehner, who has charge of this spray ring proposition in the state, should have something to say to us.

MR. KUEHNER: I am sorry I cannot add anything to what has been said. I believe we must get rid of the poor varieties and the poor fruit. That is, we must make our trees produce fruit which is good size, uniform and well colored and we can do that by proper pruning and fertilizing, which would mean a little additional work to the spraying we are doing now. Several county agents have spoken to me already about this more detailed work, pruning work, in some of these spray ring orchards, which will mean improving the trees which have received already, three or four years of care. We need more of that in the counties after they have been in the work a little longer. Some of the counties are just beginning. The first year we can only clean up the orchard, the second year a lot more can be done, the third year a little more and the fourth year begin some different work.

MR. CHRISTENSEN: There are a number here who have had roadside markets. We would like to hear from them.

MR. KUEHNER: I wonder if Mr. Steffens is in the room.

MR. STEFFENS: A good many of our apples are sold on the

roadside and some are taken to Kenosha to the public market and some are taken to the private trade. Some froze on the trees this year; we could not get them off the trees in time. We got good results on the roadside market. There is one road passing our place leading to Lake Geneva and a good many sold them right on the road. Some got $2 a bushel right on the roadside. Some sold on the trees and people came and picked them. They did not pay so much in those cases but the owners got rid of them.

MR. ROE: We have found that under conditions in our orchard, the trees were old and bore rather small fruit this year on account of severe drought and, owing to the great quantity of apples that appeared to be on the market and those that we thought were coming onto the market from the west and from the east, we decided it would be better not to try and store any apples and get what we could out of them at the least cost possible; so we hired boys and girls to pick them up from the ground and sold to passers-by for 50 cents a bushel. They brought their own sacks, or we sold them sacks for a nickel. The sacks cost us three cents, so we made a profit of two cents there. We sold a great many apples, probably three thousand bushels, at 50 cents with a cost of not over 10 cents a bushel to handle. I think that is probably better than any other way we could possibly have handled apples this year. We had a great many people stop, at times as many as twenty-four automobiles lined up in our yard waiting to be waited on, and that is probably as good as we could have got from a much better quality of apples if we had handled them in a different way—boxed them carefully and put in cold storage. We would have had 50 cents storage on the apples, we would have had 30 cents at least for the box and packing and possibly got $1.50 for the apples after they were put on the market, so we were very well satisfied with the thing as it was this year.

MR. MOYLE: We have had a little experience along those lines. We are thirteen miles from Racine and fourteen from Milwaukee. We had a lot of apples and also a lot of worms. Lots of the late apples were good size. We were awful busy and had all varieties and all sorts. We inspected them a little and said, "We will move them right in the orchard at a dollar a bushel. We will try it out." We put up a sign. Some of the neighbors said we ought to get more, apples in town were $2. In ten days we had sold $200 worth of apples. When we got ready we had some picked and threw them into bins, stored, before we started to move these apples. We gave the sacks free and found it a very profitable proposition. We could have sold two thousand bushels from our door of these forty varieties—and they were not good, we were ashamed of our apples, they had lots of worms in them.

MR. CHRISTENSEN: Has anyone anything to say on the opposite side? If not, the next speaker is Mr. McKay.

VALUE OF NURSERY STOCK

BY W. G. McKAY

Mr. President, Ladies and Gentlemen: Those who are acquainted with our worthy secretary, Mr. Cranefield, know that he is very thorough and practical. Therefore, in assigning a nurseryman the subject "Value of Nursery Stock," he has indicated plainly that my discussion shall be from a price standpoint, or rather, "Are the fruit growers paying too much for nursery stock." I am very glad of the opportunity to discuss this subject from a nurseryman's viewpoint.

Nurserymen do not control the price of their trees, shrubs, or plants any more than you fruit growers control the price of strawberries per case. The price of your case of strawberries is controlled by the supply and demand. The consumer establishes the price of your berries. You fruit growers and planters of nursery stock establish the price of our products. Prices of nursery stock are regulated by the available supply and demand. If the demand falls and nursery stock is in surplus throughout the country, the prices will fall regardless of the production and marketing costs. This applies to all agricultural products. Nurserymen are farmers. They till the soil and offer the products of their labor to you fruit growers and home owners. Therefore, your demand for apple trees, cherry trees, etc., establish the wholesale prices. Nursery stock has sold higher the past few years for the reason that the demand has been large and the supply small.

Retail prices to planters are based on prevailing wholesale prices, the same as any other class of merchandise. Previous to the World War many large growers of nursery stock in the United States were marketing their goods at less than the cost of production for the reason that we had an over production of nursery stock. Many nurserymen went broke, or had to engage in some other line of business. When the war broke out in Europe the prices of wheat and other farm commodities advanced materially in price. Many of the large growers decreased their planting by at least fifty per cent, and many small

growers discontinued entirely, and went to raising wheat, corn, live stock, etc., thus the change from a grower of trees to a grower of grains and live stock. The result was that in 1918 at the close of the war we were not producing enough fruit trees to supply the demand.

The nurseries of the United States were depleted, and there was no available foundation or lining out stock on hand. By foundation or lining out stock I refer to the class of stock which nurserymen use for planting in their nurseries. The nurserymen of the United States used to import annually many millions of trees, plants, and shrubs from Europe. This stock was used largely for planting in the nurseries. When the war broke out ocean transportation became demoralized and it was very difficult to import stock from Europe. About the time that ocean transportation was available for importing of nursery stock the Federal Horticultural Board placed a quarantine on the import of practically all classes of nursery products with the exception of fruit tree seedlings, bulbs, and some new varieties. This left the nursery men of the United States with depleted nurseries and no available foundation or lining out stock on hand. As above stated, the Federal Horticultural Board allowed the import of fruit tree seedlings or stocks which is used very extensively by the nurseries here in grafting or budding fruit trees on. However, war disorganized European nurseries and consequently they had very few seedlings to offer, which demanded a very high price. Therefore, many nurserymen who were again willing to return into the nurserymen's fold and assume their former occupation were left without the necessary material. The demand by the planters continued and even increased, consequently the wholesale prices advanced materially, for the simple reason that the demand exceeded the supply.

Nursery stock will continue to be much higher than pre-war prices unless foundation stock becomes more plentiful and nurseries overplant or the demand diminishes. The expense of growing and marketing our products has increased at least 100 per cent in the past few years. Production costs naturally vary in the different sections of the United States. It is almost impossible to have any accurate cost system on the growing of nursery stock. This applies to all classes of agricultural products. Even though you had a complete and accurate cost system on producing and marketing 1,000 cases of raspberries, and your

system would prove they cost $4.00 per case to produce, when crated and ready for market, you certainly should be entitled to a net profit of 10 per cent, thus your raspberries should sell for $4.40 per case. However, when they arrived on the market we find a surplus of raspberries, and they are selling at $3.50 per case. Hence, your cost system is of no practical value excepting that you know there was no profit in your crop of raspberries. The nurserymen are in the same position when their trees, plants, and shrubs are developed and ready for market. They must be sold or they become overgrown and are of no particular value.

The retail nurserymen have a very large overhead expense in distribution of their trees, plants, and shrubs, which adds materially to the price paid by the planter. The inspection by the State Entomologist is very rigid. This is, of course, necessary in order to control insects and plant diseases. Customers also demand better service from year to year.

In conclusion, I am inclined to think that the average nurserymen selling their products at the prevailing prices are only making a fair return on their investment. The life of a nurseryman is not a round of pleasure. There are often more pickles than sweet apples found in his warehouse of choice fruits and meager profits.

Bearing apple in United States, 1910	$151,322,840
Bearing apple in United States, 1920	115,265,029
Decrease in 10 years, 23 per cent, or	$ 36,057,811
Apple trees in United States not of bearing age, 1910	65,791,848
Apple trees in United States not of bearing age, 1920	36,171,604
Decrease in 10 years, 45 per cent, or	$ 29,620,244

DISCUSSION OF McKAY PAPER

MR. MCKAY: I might also state that you cannot always judge the value of a tree by what it sells for. You growers might sell strawberries at a dollar a case. That does not mean that strawberries are not worth more than a dollar a case. Sometimes nursery stock sells for less than it cost.

Mr. Cranefield suggested that we bring up a few grafts and trees to show how they start. I presume most of you know.

MR. CHRISTENSEN: Would anyone like to ask Mr. McKay any questions?

A MEMBER: How would you trim your trees?

A MEMBER: What is this cloth on for?

MR. MCKAY: These are new grafts and we did not want you to get your fingers sticky.

A MEMBER: Does the wax hold the graft?

MR. MCKAY: No, there is a string under the wax.

These are some plum seedlings grown from seed one year, replanted the next year and last summer budded. You will find the bud right in the string. We tied this string on to show you where the bud is. We cut this off next year and you get the tame plum.

A MEMBER: You don't graft them like apple trees?

MR. MCKAY: No, bud them just above the ground. During the summer months you raise the bark and put your bud in and tie it up. It grows together.

MR. CHRISTENSEN: Do you think quarantine 37 is of benefit to the nurseryman, or a detriment?

MR. MCKAY: I am glad you brought that subject up. A great many folks think the nurseryman put this quarantine over. The nurserymen objected greatly to the quarantine and it did a great deal toward raising the price of stock. We used to import a great deal of nursery stock from France and Belgium and a very few were in favor of the quarantine who had large stocks of roses, etc., on hand. Practically all the larger portion of the nurserymen sent telegrams down to Washington and held conferences with the Federal Horticultural Board and asked them to delay putting on this quarantine five years until nurserymen could get stock shipped over. There was a scare over the corn borer, the brown-tail moth, etc., but they would not give us a few years. Of course a good many apple seedlings that are used for making root grafts like we do here are produced in Kansas, practically all are produced in the United States now. That is really a separate branch of the business; there are nurserymen that raise apple seedlings to sell to the others. We are getting now a really sufficient supply of apple seed but, of course, it takes three years before you get a supply of apple trees and you know when there is a demand, when people are buying more apple trees than are produced, they are going to be high. I think in a few years apple trees will be cheaper, but, of course, they are going to stay fairly high.

I had another subject I just wanted to touch on, if I have permission. I was, a few weeks ago, at a nurserymen's meeting at St. Paul and Professor Alderman talked to us on the fruit breeding farm. They are doing a great deal in breeding new fruits and I rather think we ought to have one in connection with our University. We have a very fine university, very fine horticultural department, and it seems to me it would be very valuable

for the students to learn how new fruits are developed. At Minnesota they have considerable space under glass to grow fruits and pollenize them under there, cross-pollenize them, in producing new varieties. They have produced varieties of value, a great deal of value, for instance, the Minnesota No. 4 raspberry. That was a very valuable raspberry. They have produced a number of new varieties of plums which are very valuable. Professor Hanson, of the Brookings, South Dakota, station, has done a great deal in plant breeding. They are doing a great deal at Ames, Iowa, and we, up to this time, have not been doing anything in Wisconsin. In order to have a plant breeding farm in Wisconsin we must have the support, or rather have a demand made by the horticultural society, the fruit growers and the nurserymen; they are the people really directly interested, and I would like to see a resolution passed by this society recommending a plant breeding farm in connection with our agricultural college. I understand that the Federal Bureau of Plant Industry would probably give us some financial aid. The federal government aids in the establishment or maintaining of plant breeding farms.

I have talked to Mr. Cranefield and some others and I would like, or rather we thought that it would be a nice thing, a nice addition to our university; and I would be glad if the members here would give it some consideration, and possibly we will have a resolution introduced along this line.

MR. CHRISTENSEN: Any more remarks? Years ago when Professor Goff was alive the university did carry on a certain amount of plant breeding, but I think it was dropped at that time. That is, in the line of fruits, and it seems as though Wisconsin ought to have one. There are many things we are learning, new methods in originating new varieties, that is, learning a little bit of how varieties can be improved and of the law of heredity, and I think that greater progress is going to be made the next ten years in plant breeding than has ever been made before and I think Wisconsin ought to have one, to do its share of the work.

Thursday Morning

PRESIDENT'S ADDRESS

MR. H. C. CHRISTENSEN

We are met in our annual convention to discuss the various phases of horticulture. Some of us have been meeting here for 25 years or more, and some, like Father Toole, are real veterans in attendance.

In those earlier days, orchard plantings were scattered and largely experimental, consisting entirely of what we today term "farm orchards." Now we have extensive commercial plantings in various sections of the state, from which thousands of bushels of fruit are gathered. Spraying was then in its infancy, and various methods of culture were being advocated. Now spray formulas and methods of culture are pretty well defined. Varieties have been thoroughly tested as to hardiness and merchantable qualities. Co-operation and better methods of marketing are being used in disposing of fruit.

In the line of small fruit there has not been a corresponding growth, though new areas, particularly adapted to berries, have been developed, especially in the northern part of the state.

In the line of trucking, Wisconsin cabbage and onions are quite a factor in the markets of the nation. In those earlier days not much was attempted in the way of landscape gardening except the planting of a few trees and shrubs on the lawn. Today, thousands of dollars are spent annually in improving public parks and private grounds. It is only in recent years that we have come to appreciate our native flora and landscape, and now we have societies for the protection of our wild flowers and the preservation of the beauty spots of our state.

We feel that our society has played a large part in the development of horticulture in Wisconsin. Year after year, members of our society have been giving unselfishly of their time, experience and influence to the cause, and through our conventions, annual report, paper and correspondence, this information has been spread to the borders of our state and beyond.

Few of us realize the benefit our trial orchards have been to the state. There are many of our northern farmers who are enjoying home-grown apples that would not have them had not our society demonstrated what could be done in the way of fruit growing in the colder sections of our state. There are other ways in which our society has been helpful. An instance was brought out at the recent annual convention of the State Florists' Association. Some member made a suggestion that a fund be raised to employ counsel should favorable or adverse bills come before the legislature. Another member replied that this would not be necessary as the State Horticultural Society was always on the lookout to render such assistance. Our society has always been active in securing the passage of laws favorable to and just as active in trying to defeat laws adverse to horticulture, not only in our own state but in the nation as well.

Whether our society shall continue to grow in usefulness will depend largely on the unselfishness and activity of its members.

If we, like those who have gone before us, are willing to give of our time, experience and enthusiasm to the work, Wisconsin horticulture will grow and prosper. This is the age of co-operation and mutual helpfulness as exemplified in our co-operative societies, Rotary, Kiwanis Clubs and like organizations, and nowhere is such helpfulness needed more than in agriculture, of which horticulture is a part, and of which George Washington said, "Agriculture is an occupation for which no man is too high or low."

Nellie Burget Miller expresses the creed of the horticulturist in the following prayer published in Suburban Life:

"*O Thou*, who hast caused the earth to bring forth grass, the herb yielding seed and the tree yielding fruit, wakening in us a longing to imitate, in some familiar spot, the beauties of Thy creation, help us to grasp the meaning of these happy growing things.

"*Reveal* unto us the mystery of tender shoot, of clinging tendril, of expanding leaf, of opening bud and of floating seed, that we may weave it into the tissue of our faith in the life eternal.

"*Give* us wisdom to cultivate our minds with the industry which we bestow upon our tender seedlings and to weed out malice, disdain and selfish greed as we patiently uproot the purslane and tangle grass from our borders.

"*Broaden* us lest we grow to care more for flowers than for folks, lest we seek a fleeting culture rather than a steady root-

growth; surround us ever with the incense of spirituality, for a life without worship is as a flower without fragrance; and, above all, keep us ever mindful of the loving kindness of the head Gardener, whose lavish sowing has brought forth such succession of unfailing loveliness."

REPORT OF THE SECRETARY

MR. F. CRANEFIELD

Mr. President, Friends: After listening to the report of the President I feel that if my report were merely one for inspiration I would need to say nothing, because the words of the President to which you have just been listening are certainly full of inspiration, foresight and good feeling; but it falls to me to tell you something about the workings of the society and about the progress of horticulture in the state as carried on by this society during the past year.

At this time I pause a moment to say that just a few days ago, when I first undertook to bring together a few of the ideas that I will present to you today, I experienced rather a shock, no, not that, a surprise. It came to me then for the first time, that it has been my pleasure to have served you as secretary for twenty years. When I was a boy and my older brothers would speak of "twenty years ago" I would sit and look at them in amazement and think, how old you are! how far back that is! Now twenty years seems as but a day, at least these twenty years that it has been my pleasure to serve you.

Now, naturally, a decade would call for some retrospection, some looking back, but two years ago I took time by the forelock and went back over the things that we had done during that period, because I felt that that was a crucial period, the time when the farm orchard work was coming to the front and when we needed to look carefully into the future. There are some things I omitted from that report and, while I will finish as soon as possible, I hope you will have a little patience with me if I drag this story out a little.

I want to show you what the enthusiasm of youth can do. Ten years ago I was a mere boy and in my report I find that I said, "While retrospection can be an agreeable diversion it can also be a foundation upon which to build for the future, and at this

time we can look ahead. Ten years hence we may reasonably expect to have for the society five thousand members, an annual appropriation of $20,000, a weekly magazine, two field men constantly employed in trial orchard inspection, packing demonstrations in the growing season and in institute work in winter,'' etc.

Now I want to say to you today that while I consciously put those figures high at that time, I am not the least discouraged. I have as much confidence today as ten years ago that the things I there outlined will yet be accomplished. We have not yet reached that goal, it is true. We had 900 members in 1914, we have 2,318 today. A nine thousand dollar appropriation ten years ago, the same now. We had at that time probably about five thousand acres of bearing orchard, trees bearing fruit, that came on the market commercially. We have today 20,000 acres, not a hundred thousand, but who is there here that will dare say that we will not have that hundred thousand acres, and of fruit that will sell in the Wisconsin markets as western fruit is now selling, our brother from Union Grove notwithstanding.

Now, I have just as much enthusiasm, I am ready to do as much, I have as much encouragement for you today as I had ten years ago. Remember that it has taken a half century to build up the dairy industry of Wisconsin and you will see that it is not finished now. Dairymen feel it is in its infancy. What should we expect in dairying twenty years from now? It takes three years to raise a cow, ten years to raise an apple tree. We have had to contend with that. I can't put it in any better way; we have had to contend with dairying—that splendid, wonderful industry that has been built up by the agricultural college until we have the greatest dairy state in the union. I am not jealous, but we have had to contend with that all along the line. Many of you have seen the small geographies used in the schools with pictures on the maps of the different states demonstrating the industries of these states; a coal mine in Pennsylvania, men harvesting wheat in South Dakota, several pictures of that kind, and here in Wisconsin, the picture that has troubled me in my waking dreams, is this—the *cow* dominating Wisconsin. We are going to keep the cow but here is where we are going to put her right under the apple tree.

Now, I want to say a few more earnest words, or at least as earnestly as I can. I want to repeat what I have said for

twenty years. We have unequalled opportunities for the growing of fruit along certain lines. Limitation to those lines will prove successful. We have favorable soil conditions, as the Governor said, and he speaks from first-hand knowledge, not from theories. We can grow fruit which will raise us from seventeenth or eighteenth place to near the top. I am not foolish enough to think that Wisconsin will ever be the leading apple state. There are more apples grown in three counties in New York than in the whole state of Wisconsin. We have to forget from now on the western apple production. As a matter-of-fact, in the case of the growers in the far west, the more apples they produce the worse they are off. We do not need to worry about the Pacific Coast nor any other apple-growing section in the United States, if we attend to our business. If we have these opportunities are we not then foolish if we do not take advantage of them? Are we not then unwise not to grasp them? Then I say to you, *wake up!* You dawdlers, with five or ten acres of apple trees, who regard spraying as a fake, pruning and marketing as a joke, get into the game so that it will be the major part of your business. There are dozens of men who pat themselves on the back and say, "We are commercial fruit growers," who are merely dawdlers. Make it worth while, make Wisconsin worth while. You little strawberry growers and raspberry growers, wake up! get into the game, and feel there is some dignity and some profit in the game. Instead of a half acre, plant ten acres. You radish growers, coming into Madison with six dozen radishes and a few turnips, to feed Madison. Let the vegetable growers of southern Wisconsin wake up and feed Chicago. It is crying to them to feed it. Are you going to let Michigan and Illinois feed the four million people there now and the ten million that will be there within the lifetime of these younger men and women? Why not let Wisconsin do it? Wake up!

I want to say another word to the men in the agricultural college. Instead of teaching young men in your college to teach other men to teach other men to teach others and make an endless circle, educate young men to get into the practical game, to roll up their sleeves and get down and get acquainted first-hand with Mother Earth. What we *will* do we *can* do. That has been the burden of my talk for the twenty years I have been before you and we have done wonderful things, but there is an unmistakable state of lethargy in the state of Wisconsin in the development of the possibilities that we have.

Now to descend from heights of oratory—I beg your pardon, if what I have said can be so dignified—let me turn a moment to the commonplace things of the horticultural society.

We are pursuing the trial orchard work. We are continuing the work which we began 21 years ago but closing up some of it through the expiration of contracts, so that of the original 13 trial orchards there are now but five, located at Lake Geneva, Baraboo, Pewaukee, Holcombe, and Weston.

The contract for the Lake Geneva orchard expires in 1924, Baraboo in 1928, Pewaukee in 1928, Holcombe in 1929, Weston in 1930. These are all demonstration orchards. I wish I had the time to go into detail with you in regard to these orchards and the excellent results which I feel are being obtained. At Pewaukee and Baraboo we branched off a little bit and, listening to the pleas of some of our members who still feel that Wisconsin can become a winter apple state—and that number is growing less each year—at Pewaukee and Baraboo we planted some varieties of winter apples that were not then well-known in the state, such as Delicious and Jonathan. You can obtain reports on these first hand from Mr. Bassett of Baraboo, who has charge of the Baraboo orchard.

I shall take a little time to explain the small fruit stations. I gave you a brief outline in my report last year. The society now maintains six small fruit stations of one acre each where we are demonstrating to the people of the different communities that raspberries and strawberries can be grown at a profit. Four stations were established in 1921—Waupaca, Onalaska, Plover, and Wisconsin Rapids. Owing to conditions over which we had no control the station at Plover was abandoned, the others remaining. You will be interested in knowing of the successes or failures of these. You will realize it would be impossible in the time I have to give you a detailed report on all of these stations.

I have drawn this conclusion, that a fair estimate of a yield of strawberries would be $800 an acre; of red raspberries $1,200 an acre. I feel that from the two a net profit of $600 an acre could be produced but you know it is said that figures do not invariably incline to veracity. Possibly it is true in this case. The conclusion I desire to have you draw is this, that under proper conditions you can show a much better balance sheet than this, because the labor of the owner is figured in. I would draw the

conclusion that the growing of strawberries in Wisconsin and of red raspberries is highly profitable and I think the next two years will prove it even more than these figures prove. There were other stations averaged up nicely as well, especially the one near La Crosse.

In respect to the publications of the society: we have continued along the same line. We still publish Wisconsin Horticulture—perhaps some of you don't believe that because you miss a great many of your numbers—but the mailing system is now being changed and we hope if you miss a number you will notify us. We still distribute the Garden Book. We have two conventions a year and while years ago I remarked that our conventions were merely incidental, I wish to say now that it is a great part of the work.

I wish to call your attention to the American Pomological Society, a national organization working for the interests of horticulture. It holds a high place and it has been named the "supreme court of horticulture." If you ask me what benefits you will receive from membership, if you say, "How am I going to get my $5 worth?" I shall decline to answer you. It is an honor to be a member of that society; there is a certain prestige connected with it. It is your duty, as a horticultural worker, for the development of horticulture, to assist the American Pomological Society, but if you expect even $4.99 worth of returns for the $5, you may not get it directly, but you will get it in another way.

Now in conclusion, and I hope the conclusion will not be long drawn out, I state to you without fear of successful contradiction that the state horticultural society is in a prosperous condition and I do not hesitate to say that it is the major force working for the development of horticulture in the state, cooperatively with the state horticultural department of the college; recognizing of course that they are doing a class of work that we cannot do; that if you wipe it out tomorrow horticulture in Wisconsin would receive a setback from which it would not recover in a decade. You are the people, you are the ones who are doing the work. You who come here year after year and give your time to the work are deserving of the credit. I want to repeat that if we wipe out the horticultural society tomorrow, horticul-

ture in Wisconsin would receive a setback from which it would not recover in a decade.

Now, friends, the business and the work of the horticultural society has gone on for many, many years without friction. I believe that is our proudest boast that in the last 20 years or longer there has not been on this floor a single heated argument or one that would lead to bitterness and bad feeling in the hall or out of it. If I am wrong, correct me. Personally, so far as the relatively small place that I have filled in the development of this work, I am immensely proud of that condition and I think that each and every one of you may fittingly be proud of the fact that the business, the convention, the work of the state horticultural society has run without friction, without quarreling, without bitterness. We have devoted ourselves during convention time, as well as all through the year, with earnestness to the work before us. Let us have that same condition prevail for the next twenty years.

If you ask me to look ahead twenty years I beg to be excused. Wisconsin is the only society that has a full time secretary, excepting Massachusetts, which is the mother society of the United States, I think, with an income exceeding $175,000 annually.

A closing word: I wish to emphasize, to reiterate what I have said so many dozens, perhaps hundreds, of times, to impress, if I may, upon you that the State Horticultural Society is first, last, and all the time an educational institution. Sometimes some of you have forgotten that. We are an educational institution as truly and as fully as the great University of Wisconsin and in the lesser and corresponding degree. In this there apparently was some difference of opinion a year or two ago as to whether commercial men should do this, that or the other thing that might be to the detriment of the society, and whether the amateurs should wholly dominate the society. If you would keep to that one idea which I firmly believe to be true, that the society is an educational institution, these differences would disappear at once and we would have the efforts of all the members of the society working to one common end. One class of members have the same right as another, whether amateur or professional. Neither should, can, nor will dominate the society. When you do that, if the occasion should come when this society should become a purely commercial organization with twenty men sitting here instead of a hundred, and those twenty men commercial

men, then is the end of the usefulness of the state horticultural society.

Now, Mr. President and friends, I have kept you longer than I meant. I thank you.

SELECTING FRUITS FOR EXHIBITS

PROF. JAMES G. MOORE

Ladies and Gentlemen: It is rather difficult to know just what to say on the question of selecting fruit for exhibit. There is so much to be said and so many different phases which might be discussed as separate topics that when one has the entire subject it is a question of possibly as much what to leave out as it is what to say.

In the selection of fruit for exhibit it is necessary for the person making the selection to have some standard in mind. It is fortunate for the exhibitor if that standard should happen to coincide with the standard which the judge has in mind. The nearer these two standards coincide the more fortunate the exhibitor and, possibly, the more fortunate the judge.

Now of course it is more or less difficult to have those two standards the same but the attempt to do that results, or has resulted, in a score card—a standard—which has been set up, which may be given to the exhibitor in advance so that he has at least a reasonable chance for knowing what basis the judge will have in making his decision; and having that he should of course be more successful in his selection if the judge adheres to the score card as judges are supposed to do when a score card system is employed.

We may not agree upon the question of relative weights which will be given certain things. I suppose that if you get any group of fruit-men together and said, "Here are 100 points to be divided between shape (or form), size, color, the uniformity of the sample and freedom from blemish," we would scarcely get any two that would be identical throughout the entire five points.

Let us go back into the history of fruit score cards just a little. The score card most used in the past, as originally formulated, was worked out by a committee appointed by the Society of Horticultural Science. The score card they formulated was very much similar to the one we are using for the judging which we are do-

ing at the various fairs and exhibits in this state. I say "we;" I mean the men who go out to judge from the University. How far that score card is followed by other judges in the state I cannot say. Our score card differs in one respect in that we have shifted five points from form or shape, as it appears on the original score card, to other considerations. Our reason for doing so is that we believe that shape or form is the least important, the least easily determined as to what is typical or what is ideal, of any of the points which we have to consider. Just to illustrate: If you were to judge the fruit at the Manitowoc County Fair you would find that the man who lives in the vicinity of Lake Michigan and brings in his fruit for exhibit has fruit of a very different shape from the man who lives in the west end of the county. Now who is to say whether the man who happens to live on the lake shore has more or less typical fruit as to form or shape than the man who lives in the western part of the county. Furthermore, in my judging work, I stress very lightly the question of what is the typical form and score off very little unless there should be specimens so very different from the others as to indicate that the specimen was clearly not typical to form under any consideration.

The thing we are after in selecting fruit for exhibit is to get what we consider ideal fruit. I suppose that the point over which the greatest controversy might arise as regards what is ideal would be on the question of size. Let us say at the start that we recognize clearly that there is reason for difference of opinion but we can probably arrive at an agreement on the question of size better if we start out by stating some common ground. This controversy regarding size of fruit for exhibit arises, I think, primarily because the man who insists that the biggest specimens should be rated highest, because they are the ones that sell best in the market, has taken as his basis for selection the marketed standard. Another method I have heard argued for rating on size according to a market standard is that as long as size qualifies under the law it should be rated full value. Certainly here is a wide difference in opinion as to standard even when the same basis is used. But is market value necessarily a true basis on which to judge what is ideal fruit? Personally I do not believe it is. Let me illustrate. Supposing you are judging Wealthies; here is a sample in which the specimens run a little above the average size for Wealthy as grown in Wisconsin. In competition

with it is a plate equal in all other respects, but having the size of an average sized Wolf River, which would not be at all difficult to secure if selections were made from young trees on fertile soil. Which would you give preference as being the best plate of Wealthies? If I mistake not, every one of you would place the smaller sample first.

We frequently hear exhibitors discussing the question of scoring off for "over-size." In the abstract nearly all seem to oppose it and yet in the case just cited that is exactly what you would have done if my guess as to how you would place the fruit was correct. A judge has to be very careful about scoring off for oversize and in most cases oversize is accompanied by other defects which make it unnecessary to depend upon oversize alone for rating the oversized sample lower than a moderate sized sample. However, it is best for the exhibitor to take no chances and select his fruit only slightly larger than a good average size for the variety when grown under favorable conditions. I think there would be little difference of what would constitute excellence as regards the other points which a judge takes into consideration in making the award. Therefore, we can now consider the method of applying the standard in making selections.

In giving a talk one has to take up the various points as they are considered separately in selecting the specimens. In actual operations we keep in mind all of the points as we handle the fruit, but at one time stress one mostly and at another the others. The first selection is made emphasizing blemish. While discarding specimens blemished enough so that it is evident that they cannot be used, any poorly colored or badly off form may also be thrown out. Blemish is rated highest. Therefore, it is evident that it should be given more serious consideration than any other one point.

Selection on the color basis comes next. There is no danger of getting fruit too high-colored for exhibit. The only exception that I know of is with certain green varieties. In the east they score off if the fruit is blushed. Frequently we are asked, "Should I select blushed specimens of Northwestern?" We have always considered red color on normally green apples as negative, that is we neither give a higher score for it or cut the score because of it. A normally green apple scores full on color whether blushed or not. There is a point to consider, however, in selecting specimens of some varieties of green apples for late

exhibits. While the Northwestern is a green apple in the fall, it has a yellowish tinge in the winter. A Northwestern not showing this yellowish tinge at the winter show would be scored off on color. Size and uniformity, particularly uniformity of size, are next given special attention. Before starting to pick out the specimens look over the selected fruit carefully and determine what the best size is of which you have the best chance of getting the desired number of practically equal size. Taking that size as the basis pick out all the fruits of that size and place in a pile by themselves. If the size of the specimens is smaller than you think desirable, decide on another size and then see whether enough specimens of this size can be secured.

We are now ready to make our formal selection on the basis of uniformity. Remember that uniformity has the second highest rating and it is better to sacrifice something in size and height of color to secure specimens as nearly alike in all respects as possible. To get the best results the specimens will have to be gone over several times trying substitutions of one specimen for another until just the right combination is secured. Keep in mind in doing this the relative weights of shape, size and color and, if necessary, sacrifice on the lowest rating point. It is a good plan to select one or two second choice apples to be used as substitutes in case any of the first choice ones become blemished. Uniformity especially of size and color need to be emphasized very strongly because it is so frequently over-looked by the exhibitor.

We invariably find that somebody brings in a plate on which they have, we will say, four apples of about the same size or possibly the same color and then setting on the top to attract attention to it is one which is very much larger or very much more highly colored. Then they wonder why the judge did not give them first because, in their opinion, certainly that especially fine specimen added much to their exhibit and, therefore, was surely superior to its competitors, which did not contain such a large, red specimen. In selecting for uniformity the ideal, as I have already indicated, is to have every specimen as nearly as possible like every other in size, color and shape.

I have tried to outline what I believe is a good method of selecting fruit for exhibit and to give you the reasons from the exhibitor's viewpoint for a score card. I confidently believe that the score card system of judging is the fairest one so far as the exhibitor is concerned and the only one by which the judge can

arrive at a correct decision when the samples in competition are very close. In large shows it is not uncommon to have a half dozen or more plates of fruit so nearly alike that it is minor differences which determine the winners.

With the judge having to consider the relative value of the samples on five different points, each one of which has a different weight, in order to determine which is the best sample, you can readily see that it is an impossibility for him to carry in his mind the total rating of all of these samples. With the score card he determines the relative value of each sample for a particular point, records it and then considers the next point. At the end he has only to add up his scores to determine which samples excel.

DISCUSSION

MR. KERN: You mention the Rhode Island Greening and the blush. It has left some question in my mind regarding Patten's Greening.

MR. MOORE: With green apples which are not supposed to have a blush, our practice is to ignore the blush if one is present. That is, it neither adds to or detracts from the scoring value. In the fall about fair time the probabilities are that most of the Northwesterns will score full on color. In the exhibit downstairs, you will find there are samples of Northwestern Greenings that do not score full in color. The reason is that at this time the typical Northwestern Greening should not be green, but yellowish. You see we have changed our standard of judgment because of the differences due to season. In other words, we give no preference to colored green apples above uncolored green apples, but we do recognize that at different periods the typical color may be different.

A MEMBER: You say you ignore the color of the blush on the green apples? That does not count as to uniformity. If you had four or three early apples and two with good blush would not that detract from the uniformity?

MR. MOORE: I was not talking about the uniformity of color. The score card used to be somewhat different. Formerly we scored uniformity along with color, size and form. Now we give it separate consideration. In actual practice we usually allot the 25 points on color as follows: 5 on form, 10 each on size and color. This makes it easier for the judge. On our score cards we now provide at the bottom a place for scoring the fruit on the separate item making up uniformity.

MR. HAUSER: But in cutting on an apple because it is over-

colored it is then really possible that you may have perfect color in a plate of apples that would not score full on uniformity.

MR. MOORE: A plate might have twenty points on color and only eight points on uniformity of color. One apple might be a light red and another a dark red.

MR. HAUSER: They are both perfect.

MR. MOORE: They both have full color; all the color that you expect that variety to have.

MR. MOYLE: In judging, I am sure every individual in the state who is judging and using the score card appreciates the value of it. I have found it has helped me over lots of rough spots in the road. I varied it, put size and uniformity second and color third. You said color second. I have used it third and find it very satisfactory indeed. You can explain to your exhibitors better the why and wherefore; why you do these things.

MR. MOORE: Probably the reason you can explain it better is because you know better yourself.

MR. CHRISTENSEN: I think we will have to bring this talk to a close, because we have another member on the program this forenoon. Bees and blossoms, by Professor H. F. Wilson.

BEES AND BLOSSOMS

PROF. H. F. WILSON

Just what is the relation of insects and especially the honeybee to the growing of fruit? Are bees really necessary or even helpful in the production of perfect fruit? There are so many facts on record showing that insects are necessary for pollination of plants of many kinds that we can hardly question this fact. In the case of the honeybee, it's only one of the many insects which nature has created to help in the pollination of plants. However, it is known that the bumblebee, the honeybee and the solitary bees live exclusively on the pollen and nectar from plants, and that of all insects which work on blossoms these are most active in spreading the pollen over the pistil, because of the fact that they go into the nectar cup for part of their food. Many folks think of the honeybee only as an insect which produces honey, but as a matter-of-fact the honey produced is of little importance compared with the great value produced in the cross-pollination of plants of all kinds. Although there are

some plants that do not need cross-pollination, the majority of them do and even those plants that do not need cross-pollination are greatly benefited by the transfer of pollen from one plant to another. In some cases even distinct species of insects are necessary for the pollination of specific plants. Two of the commonly known ones are the yucca plant and the smyrna fig. In the case of the yucca plant, the fertilization is brought about by an insect known as the yucca moth which collects pollen and actually inserts it into the pistil of the blossom. In return the moth depends upon the developing seed for the food of its young. The adult moth by the means of a sharp ovipositor inserts her eggs to the number of half a dozen into the ovary of the blossom. These eggs hatch after a few days and the young larvae feed on some of the developing seed. However, only a few of them are destroyed and a sufficient number develop to assure the continuation of the plant.

In the case of the smyrna fig only female flowers are developed and as these are entirely within the fruit, fertilization can only be brought about by some outside agent. This agent is a tiny four-winged wasplike insect which develops on wild figs and from which it carries pollen to the cultivated species. Without this insect it is impossible for the smyrna fig to be fertilized except by the hand of man.

CROSS-POLLINATION OF PLANTS

Of course the wind is more or less responsible for the distribution of pollen from one plant to another, but investigations made by a number of our research men indicate that insects are much more efficient than the wind. In the act of visiting blossoms bees become dusted with pollen which is distributed to other blossoms as they crawl into the flowers searching for nectar. As each plant is visited the pollen is rubbed onto the pistil of that blossom and more pollen dusted onto the body of the bee, so that after having visited a half dozen blossoms the bee is so covered with pollen from the various flowers that cross-fertilization is assured with every blossom which they visit.

WHY BEES VISIT BLOSSOMS

Bees visit blossoms for just one simple reason and that is to secure food. This food, made up of pollen and nectar in all stages is a complete one for bees. It is quite clear that nature

does not permit anything to exist which is not necessary in the plant or animal kingdom. If bees and other insects are not necessary for the cross-fertilization of plants, why has nature provided the nectar in the blossoms? So far as we know the nectar is not necessary for the fertilization of plants and serves only one purpose, that is to attract insects. Remove the nectar and pollen from the flower and you will find that insects do not visit them. Remove the nectar and leave the pollen and provide some other means of getting nectar to bees, and you will find that blossoms are only visited to a very small extent by them. Bees will go to flowers which do not secrete nectar for pollen, but not in as great an abundance as where the nectar is produced. If you will watch the blossoms in the spring time or summer you will note that if the blossoms are secreting nectar they are covered with bees. On the other hand, if no nectar is being secreted although the blossoms are in full bloom you will find comparatively few bees on them. Another important fact is that the nectar cup is always placed at the bottom of the flower and before the bee can reach this cup it is necessary for it to come in contact with the pollen. Plants which are not cross-fertilized do not have nectar cups and, of course, do not secrete nectar. Another point which is of the very greatest importance to plant life is the fact that the production of new varieties is due to cross-fertilization of some kind. Many of the new forms of plants which are from time to time appearing must to a more or less extent be blamed on the honeybee and other insects for the interchange of pollen produced in sport varieties. I do not mean to infer here that pollen from all sorts of plants are distributed onto other plants although this undoubtedly does some time occur, but nature in her wisdom has produced a perfect machine in the honeybee for the fertilization of plants. Just how this works I will explain. The bees have their bodies so constructed that they can not take food except by suction in the adult insects, and absorption in the brood stages. The main food of the adult bees is nectar and possibly pollen, the main food of the young bees is a mixture of pollen and nectar with a special food said to be in the head of the worker bee for the aid of the very young brood. The structure of their mouth parts and digestive tracts are such that they can not survive on any other food except sugars. In nature the bees can secure this only from the nectar glands of blossoms. Just how well nature has developed this scheme may be seen in the fact

that bees make no distinction between varieties of the same plant. They go from one variety of apple to another, and so on. But when the bee has once started on the blossoms of certain varieties of plants it continues to work on that variety entirely until it has secured all that is possible. It does not go hit or miss to apples, plums, grapes, pears, etc., and so in this way a pure unmixed pollen is assured for each blossom. This does not mean that only one species of plant is being taken care of at the same time, because bees from the same colony may be working on a dozen different kinds of plants. The forces are so divided that distinct groups of bees work on each species. Now see how cleverly nature has worked out her program, so that the bees and other insects which pollenate the plants shall not be exterminated. All plants do not blossom at the same time. Early in the spring we have willows, elms, maples and many other trees. At the same time we have some early spring flowers. Later the dandelion appears in greatest abundance at the time when it is most needed by the bees. Upon this early spring food the bees increase greatly in numbers, so that they are abundant at the time of fruit bloom. You must remember that practically no other plants are in blossom at the time when fruit bloom is on. Later on when the clover and alfalfa come into bloom the colony is at about their maximum strength, and so are able to fertilize the numerous blossoms to be found in the fields at that time. Later other plants, basswood and buckwheat, and in some parts certain fall flowers come in regular succession. In this way nature has arranged that the bees shall have sufficient food to keep them going, and at the same time has arranged the schedule of the blossoming of plants so that they will receive the full attention of the bees. There are a number of cases on record in Wisconsin showing that the honeybee is exceedingly helpful in securing a prime crop of clover seed.

SHOULD WE SPRAY FRUIT TREES IN FULL BLOOM

For many years there has been more or less of a controversy between the beekeepers and the fruit growers, because modern methods for producing fancy fruits includes a spraying program to destroy injurious insects and plant diseases, which at times appears to be detrimental to the bees. Beekeepers are continually complaining that when trees are sprayed in bloom the poison used for the control of the injurious insects also causes the death

of many bees. And this is also supported by evidence brought forth by a number of scientific investigators. On the other hand, in opposition to this, certain other investigators have carried on similar experiments and the results which they have secured indicate that the bees are not seriously harmed by spray poison. I am of the opinion that this situation is governed more or less by existing conditions in the field and that there are times when serious losses are caused to bees by spraying trees in bloom. Now the question is, whether or not it is absolutely necessary to spray trees in full bloom to secure the best results. Experiments indicate that the most successful results are secured by spraying trees just before they come into blossom and just after the blossoms fall, because with blossoms on the trees certain important parts of the fruits can not be reached and all of the spray which falls on the petals of the blossoms is lost when the petals drop from the trees. For this reason a fruit grower in working out his spray program should consider that he himself is quite likely to suffer from ill-advised spraying, if millions of insects which normally worked for him in the orchard are destroyed. Of course, I agree with you that your spraying program should be worked out to give the greatest efficiency in control of injurious pests. However, that program is not efficient if it is so arranged that the beneficial insects are at the same time destroyed.

IS FRUIT EVER ATTACKED BY BEES?

Very frequently the bees are accused of injuring fruit. However, this is not true as it is impossible for bees to cut any smooth surface which it can not soften by moistening with its tongue. Bees found working in punctures on fruit did not make the beginning puncture in the skin of that fruit. It was caused by some other insect or by plant disease. When this happens one may expect to find bees attempting to suck out the juices of the fruits through these broken spots.

HOW TO WIN

BY D. C. WEBSTER, *La Crescent, Minnesota*

Sometime ago I was informed by your secretary that I was to be on your program, and that my topic would be "Prize Winning." That is my excuse for being before you at this time.

Winning prizes at fairs, horticultural shows, and similar expositions is, I suppose, then, what I am expected to talk about. I know of no other reason for being accorded this high honor, except that I happen to be one of those who is looked upon as having had experience. As my experience in this line has been almost entirely confined to the showing of apples, I will endeavor to present to you in my own rambling way some of the "hows" and "how nots" that go to spell success to the exhibitor at the more important apple shows.

Time was, in years gone by, when an exhibitor was at a considerable loss to know just what kind of apples to bring to an apple show to win prizes. In those days each judge had his own ideas of what constituted a good apple. As a consequence there were nearly as many opinions as to the merits of an apple as there were judges. This being the case, an exhibitor, unless he knew his judge in advance was at a loss to know whether to bring the big apple with the wormhole, or the little one with the red cheek. And whether a bruise the size of a dollar on the side of an apple would lessen its chance of winning a prize was wholly a matter of private opinion with the judge. But those days have passed. Nowadays the judges at even our less important apple shows are usually men who have good judgment to start with, and who have been schooled after a well-established standard of judging. With this standard of judging having become more fixed the exhibitor is in a better position to estimate how his fruit will be regarded by the judge. In my opinion this development in judging has had a great tendency to discourage the more careless and indifferent exhibitors, and has built up a class of what might be termed professional exhibitors. These fellows are always in evidence at the apple shows and usually capture all the big money. Perhaps this is as it should be, as there is no question but the quality of exhibits has been greatly improved in recent years. As the primary object in any exhibition is educational, both for the public and the exhibitor, it is essential that the exhibitor who brings out the good show be recognized. If he is discouraged there is little chance of the show business lending any advancement to the growing of better apples.

How then, do we go at it to get in on this prize money? Well, first we must have an orchard. We must have a pretty good orchard. If it is a young orchard, so much the better. Anyway, it must be a fairly well-kept orchard. It must have been well-

sprayed, and some attention paid to trimming, and must be located on a reasonably favorable site. Now there are many, many, just such orchards as this all over the country, but the exhibitors who bring home the bacon are few and far between. I have often said that I could go into some other man's orchard and pick just as good apples as I could in my own. I will openly admit that my orchard is not the very best in the whole world. The fact is that you can go into no orchard and pick prize-winning apples without a great deal of painstaking selection. A plate of apples to win first prize must of necessity be not only a good plate; it must be more than a very good plate; in fact, it must be the very best plate in the whole land. Granting that the orchardist may have a fine crop of excellent apples hanging in his orchard, it is still a long leap to the big show, and still another bigger one if your apples pass the judge's elimination process, and you are awarded the blue, or possibly the purple ribbon.

I am sufficiently well acquainted in my orchard so that by the time apple picking arrives I have a pretty good idea about where the possible prize winning apples are located. I usually find time to sly out ahead of my regular apple picking crew and pick off these suspicious looking fellows that are easy to find and easy to reach. For this purpose I use a padded basket. In harvesting my regular crop of apples the most of them are picked into picking sacks, and from these placed into barrels, which are hauled as picked into the packing shed by team. But show apples will not stand this kind of usage, and so I have my pickers instructed to save out all the extra fine specimens, and as soon as picked these are at once placed in my padded basket, which always accompanies the team. It is true that picking this show stuff out in this way adds a trifle to the cost of harvest, as all these extra steps take a little time. However, there is no other way to get prize winners, and when the show bug has got you, you've simply got to get the apples, that's all. These apples must be separated from the ordinary stock at once, or they are almost sure to get punctured or bruised, or at least some of them are. So you see by the time the picking is over we have accumulated quite a stock of the very best of our whole crop; perhaps several times more apples than we need for exhibition purposes. These are carefully put away in our back cellar until such time as we can more leisurely look them over. While not all the apples selected

in this way will prove to be show apples, nevertheless we have the show apples among them. Thus we have the best specimens of all our varieties segregated, and in the best possible condition. As soon as time permits we go over all these again, and select the ones we intend to use for each individual show; and those we intend to use for the late fall or winter shows we send direct to cold storage to the city in which the show is to be held. We always include quite a few extras in this pack, as no matter how carefully we select and pack, accidents are bound to happen.

One of the most serious difficulties the inexperienced exhibitor must solve is how to pack his apples that they will transport to the place of exhibition without bruises. I find no other way to do this than to give them a good generous supply of wrapping paper. I prefer the barrel to any other package when shipping by express. I start my barrel by putting two corrugated paper caps in the bottom. I also line the sides with caps. Then I pack in a layer of apples, well wrapped in paper. Pack in fairly snug, but not too tight. After the first layer of apples I put in another cap, then another of apples, and so on till the barrel is full. Fill your barrel only so full that it will need but slight pressure to close it.

Without attempting to suggest any particular system of scoring, by which a judge arrives at his conclusions, the points which he considers in making awards are: condition of fruit, color, size, type, and in the packed exhibits, the style, skill shown in packing, and the neatness and general appearance of the lot as a whole. While some of these items bear more weight than others, still it is up to the exhibitor to get as near to perfection as possible in all these conditions, or else be content with the more or less intangible award of experience only.

Condition is about the most important item of all, for there are a thousand and one things that will subject an apple to discount on condition. Among the most common are: codling worm, apple maggot, curculio, scab, scale, apple blotch, sooty fungus, bruises, punctures, absence of stem, shriveling, scald, sunburn, water core, and just plain rotten apples. An exhibitor showing apples with any of these self-evident defects is taking a serious chance in winning a prize, besides rather discrediting his own stuff.

The *color* should be bright and typical of the variety. For red, or colored apples the higher the color the better, and they should

have a finished and mature appearance, but should not be over-ripe or weather-worn. Do not attempt to gain color on your apples after picking by giving them a sun bath, as a wise judge will recognize this unnatural finish and discount your fruit. Apples should be wiped off clean, but not polished.

The *size* should be somewhat larger than the average for the variety, but do not use an abnormal size.

The *type* of your apples should conform as nearly as possible to the ideal for that variety. They should not be lop-sided nor irregular in shape.

Under *uniformity* we consider all the apples in each lot number as a whole. They should be as nearly uniform in size, color, and shape as it is possible to get. It is often advisable to sacrifice color, size, and even condition in an individual apple if by so doing you can enhance the uniformity of your lot.

Aside from the already mentioned points in selecting fruit for exhibit is the very important item of *pack,* in your display of barrels, boxes, baskets, and trays. Besides actually having the highest quality fruit to use, it is necessary that we understand how to properly pack and display it, if we expect to win prizes. In each of the different forms of exhibit is required a slightly different form of the exhibitor's skill to insure him the highest score.

We will start with the barrel. First select a good clean barrel, with good hoops. Use a corrugated paper cap for the face of your barrel. To win the big prizes, do not attempt any special selection for the face of the barrel, as the apples in this barrel are supposed to be as nearly uniform in size, color, type, etc., as you can get. See that the stems, particularly in the first layer, or face, are not too long. If they are, they should be clipped, or they would be liable to cause punctures from pressing against the flat surface of the barrel head. Use apples of a size that will fill each row in the face up snug, and, if possible, finish the center with one apple if you are using a large size apple like the Northwestern Greening; or with about three if apples are of the Jonathan size. Whatever size you are using see that the face is up snug, and then use the same size apple throughout the rest of the barrel. Place each tier in the barrel separately, and use the same care with each tier until your barrel is full. If you are experienced in this line of apple packing you will have selected apples of a size that will just fill the barrel to the exact fullness,

and the tail of your barrel will present as good an appearance as does the head. Apples packed in this way need but a slight pressure on the head to close the barrel.

To go into the details of packing the standard bushel box requires too lengthy an explanation to attempt in this paper. I will only say that there is an established style of pack used in putting up box apples whereby any given size apple can be packed in the standard bushel box, and if the proper style pack is used the box will be filled to the exact fullness to insure the apples carrying in the best possible condition. Packing box apples is almost a trade in itself. Ordinarily the best size apple for exhibition is the size that packs 96, 104, or 112 apples to the box, and known as the two-two pack, as this size apple packs up snug and makes the best appearance in the box pack. This is also the best size to use in your tray display. Your boxes and trays should be new and clean, and be lined with white paper, and the boxes of each lot should contain apples of a uniform size and color, and the same style pack, and present a uniform and neat appearance throughout.

In the basket display also the apples should be as nearly uniform in size as possible, and be built up so that the top layer will just permit of the cover being slipped on with quite a considerable pressure upon the apples. This top layer should be ring-tailed, that is, packed stem end to bloom end, with cheek up, in successive circles beginning around the outer edge of the basket. If this is skillfully done the face of your basket will present a smooth, even appearance.

In showing a collection of plates, where we are allowed a choice of varieties, we should select varieties that are the most standard for the vicinity in which the apples are grown, or in which the show is held. Use new plates, and arrange in an orderly and attractive manner.

The single plate exhibit always calls for the very cream of the apple kingdom, and no plate of apples with even a very slight defect should expect to win here. The points that decide the winner in this contest usually simmer down to the items of: trueness of type to the variety standard; degree of finish which the apples have; and the complete uniformity of the apples constituting the plate.

Now, perhaps, to meet all the requirements I have enumerated seems like the impossible. It is in fact well nigh impossible to

get together any quantity of absolutely perfect apples. Knowing this, an exhibitor should not be discouraged if his apples do not quite reach perfection in every respect. Nobody's apples do that. So if your apples are not quite what you would like, neither are the other fellow's just what he wants. And as judging is only a proper placing of comparisons in values on apples, yours may still rank high. So do not be discouraged if A. K. Bassett's apples did get most of the money this time. Remember that every dog has his day, and the best prize fighter that ever lived was eventually licked. Don't wait for these fellows to die, but go to it while they are still living and show them that better apples than their's can be grown. Go home resolved that next year you, too, will go out in your orchard with your padded basket and search out some of these prize winners.

Always remember, that the close decisions usually hang on the items of type, finish, and uniformity.

THE SAN JOSE SCALE SITUATION

BY S. B. FRACKER, *State Entomologist*

Just a year ago in discussing some recently introduced insect and plant diseases I had occasion to quote to the Horticultural Society the words of Dr. McCubbin, of Pennsylvania, who described the history of recently introduced pests as containing "a period of carelessness and neglect during which the pest was introduced; then a period of loud voiced alarm, then a scurrying around to arouse public interest to secure funds to fight the introduction; this stage is followed by a series of futile attempts to eradicate the pest and finally the country settles decently down to live with it, either letting it have full course or trying by various means to render it as innocuous as possible—in any case promptly settling an appalling load on our national economy because of decreased production or costly annual control measures."

This description gives in a word the history of San Jose scale in the United States. Introduced in the 70's during the period when plant material from all over the world was welcome in the United States, whether infested or not, and distributed across the

country before nursery inspection regulations were established to interpose obstacles in the progress of such pests, it now covers the length and breadth of the United States. In the east the parasites have had full sway and have been allowed to control it as best they may for the past thirty years. In the Mississippi valley parasites have not made much headway, but extensive spraying has been followed of necessity in order to save the orchards. In the Rocky Mountain fruit district its control is now as much a part of routine orchard management as is the summer spraying program directed against the coddling moth.

In spite of both natural and artificial control, however, San Jose scale is now doing more damage in the United States and in one sense may be considered a more serious problem than it has ever been before. Parasites can never be relied upon to wipe out a pest. They can reduce its numbers so that it comes in alternate waves like the tussock moth, the corn ear worm, and the Hessian fly, but if they wiped out the pest completely, they would themselves starve, so that in districts where they are numerous they come to a balance with the host insect they are attacking and reduce their numbers without wiping them out completely.

The most interesting development in recent years is the apparent increasing resistance to control by concentrated lime-sulphur spraying. The reason for this may be either due to the fact that the more susceptible strains of the scale have been wiped out by lime-sulphur, leaving only the hardier specimens to propagate or it may be due to changed methods in the manufacture of lime-sulphur. In either case the insect is becoming more numerous and more injurious particularly in the latitude of the Ohio River valley, but to a large degree in such northern states as Wisconsin and Michigan.

A glance through the reports of the Insect Pest Survey Bulletin for the past two years shows that this is true in many parts of the country. In Connecticut the scale which had become scarce owing to the efficiency of parasites previous to 1922, now seems to be increasing. In Maryland it is reported to be on the upward swing in numbers due to the great reduction of natural enemies. In Indiana it has been increasing and is now doing a great amount of injury. In Missouri the commercial bearing orchards have trees badly encrusted so that a state-wide campaign has just been started, looking to the development of a more

general application of dormant spraying. In Chariton county the trees last summer were dying from the infestation and Scalecide was tried while the trees were in full leaf and fruit. In northwestern Arkansas many trees have been killed by the scale and large numbers have been greatly weakened. This has apparently also caused excessive susceptibility to certain diseases, especially leaf spot. In Mississippi the scale is reported as abundant in every county and large numbers of requests for control methods are received each season. In Lawrence county, Ohio, the growers are complaining that San Jose scale is increasing in spite of careful spraying with lime-sulphur solution. In New York, Massachusets, and Rhode Island the general impression among the fruit growers that this pest is coming back into abundance has been confirmed by recent surveys. Not until the past year has the scale been regarded as a serious pest on the peach north of the Ohio River, but this year several peach orchards have become alarmingly infested.

The fruit growers of Wisconsin and other northern states are sometimes inclined to complain about the short seasons of this climate, late spring frosts, and repeated hail storms. In the number of both insect pests and plant diseases, however, we are very fortunate. The scale which is the subject of this paper has never become established in any of the Wisconsin fruit districts. In fact, the only places where it has yet been a cause of serious injury are inside the city limits or in the large centers of population. It is now so numerous in Racine, Kenosha, Whitewater, and Madison, that its complete elimination appears impracticable. In Racine county it is also present in the villages of Rochester and Union Grove and on one or two farms. While it could be temporarily eradicated in some of these locations and while the department is engaging in spraying campaigns with that in view, keeping it out of this part of the state permanently is probably out of the question in view of the advantageous climatic conditions and the fact that it has been and will continue to be repeatedly introduced both by natural means and by such shipments of nursery stock as slip by the eye of inspectors of infested states.

North of the latitude of Madison and Milwaukee it spreads so slowly that apparently it can be readily eradicated when found. In fact, from the time the scale was first discovered in Wisconsin in 1896 and again in 1902, it must have been imported into

the state a great many times. Office records show that thirty-five separate introductions into fifteen different localities have been discovered and the host plants been destroyed. These localities are now free of the pest. The scale has succeeded in passing the winter and in multiplying to the extent of seriously injuring the trees and shrubs attacked as far north as Marinette and La Crosse and has occasionally been discovered on nursery stock from outside the state at such important points as Baraboo, Wausau, and Ashland.

This insect has secured so much advertising and is so well known in other fruit growing districts that it is often believed to exist where native scale insect such as oyster shell scale is the one actually present. In view of the present distribution of the scale in Wisconsin it is probable that not more than one-fourth of this audience has ever seen the insect except in exhibits and museums. There are several specimens on display in the exhibit at this meeting, and I hope that all the Wisconsin growers present will take this opportunity to examine it closely.

Every few months we see clippings from Wisconsin newspapers stating that one county agent or another has discovered San Jose scale in his county and is recommending control measures for it. In most cases these have proven to be incorrect. Fortunately this misidentification does no damage, as the measures suggested for San Jose scale are ones which are beneficial to the trees and are the same ones which will control oyster shell scale if that insect happens to be the one actually present.

On the other hand, mistaking San Jose scale for oyster shell scale and not considering it serious may result in serious loss. This has happened in a private nursery within the last two or three years where the gardener had noticed the scale present, but believed it was only oyster shell and did not take the situation seriously until a good deal of damage was done.

As seen with a reading glass or hand lens on the bark or fruit of a tree the scale is found to be a small round object about the size of the head of a pin with a slight prominence in the center. These minute round areas consist of wax, which covers the soft bodied little insect beneath. The latter passes the winter in the immature stage and matures in the spring. The females give birth to living young to the number of from 150 to 500. The multiplication during the summer is very rapid and while it is hindered by weather conditions in Wisconsin we have seen very

slightly infested shrubs and trees in the spring become completely covered with scale during a single season. Some years, of course, development is not as rapid as this.

As a control measure in the department we are confining ourselves to the oil solutions. As has already been mentioned, lime-sulphur is not proving effective. Several such oil sprays are on the market, Scalecide being entirely satisfactory but somewhat expensive. This winter we shall be using both Scalecide and Sunoco oil, a recently developed product which offers promise of being very valuable. For those who wish to try out the new engine oil emulsions the following description is quoted from the Extension Bulletin 114, of the Purdue University Agricultural Experiment Station. This material is effective in a much more dilute solution than other oil emulsions and will be found as effective for oyster shell scale as it is said to be for San Jose.

"The emulsion is easy to prepare and has a big advantage in cost, a 2 per cent emulsion, such as was used in the dormant sprays, costing less than $1.50 for materials to make 200 gallons of spray.

The 2 per cent emulsion is prepared as follows:

Liquid potash fish-oil soap	4 pounds
Oil (such as Diamond Paraffin, Red Engine, and Nabob oil, obtainable at most oil supply stations)	4 gallons
Soft water	2 gallons

"If soft water is not available, use lye or sal soda (about a pound per 100 gallons) to soften it. Under some conditions to assure a more mixable emulsion, we have found it desirable to double the amount of soap to 8 pounds in which case the water should be reduced to 1½ gallons.

"The three ingredients are placed together in a suitably sized kettle or cooking vessel and gradually heated by fire or with steam until the mixture comes to a boil. A light brown or cream scum will soon appear on the surface. After boiling a few minutes the scum will begin to disappear as the liquid itself becomes visible by a spot near the middle, this spot gradually enlarging as the area of scum decreases in size. At this stage the heat is removed and the mixture pumped back into itself twice or from one container to another twice, under pressure of 50 or 60 pounds while the liquid is still hot. For this purpose a nozzle or two nozzles with the disks removed are quite suited. Care should be taken to pump the liquid while hot and it should be remembered that too much pumping may break up the emulsion. The hot liquid may destroy pump packing and it is therefore best to pump the stock solution with a hand pump if available.

"The above stock solution will remain in a perfectly emulsified condition indefinitely and can therefore be made up in

quantity but it is advisable not to carry it over from one season to another,and stock solutions should always be gently stirred after standing as a certain amount of the liquid soap settles to the bottom of the container. For a 2 per cent emulsion, the stock solution is diluted with water, using six gallons of stock to a 200-gallon tank. If the water is hard, it is advisable to soften it with caustic soda, sal soda or lye at the rate of about a pound per 100 gallons, the water to be first softened and the stock emulsion then added. In Arkansas it has been found desirable, to assist in holding the emulsion thoroughly mixable, to use weak Bordeaux mixture, such as a ¼-¼-50 formula, instead of water, as the diluent."

DISCUSSION OF DR. FRACKER'S PAPER

DR. FRACKER: It is customary in a talk of this kind to draw some conclusions upon which the members of the society can act. That warning is this: That when scale insects are found in the orchard do not assume that because oyster shell is the most common species in the vicinity, the one you discovered is the oyster shell. The owner permitted these specimens in my hand to exist too long and they spread down the row and in other places. The owner was familiar with both scales but took it for granted that this was the oyster shell.

On the other hand, it also does some damage to report that San Jose scale has been found, when it is not that. Every few months we get clippings saying that some county agent has reported San Jose scale, and giving directions for control. The control measures for both are practically the same and no particular damage is done but at the same time it gives the public a little misinformation. We can determine definitely in a few minutes by specimens just which is present. To the grower it makes much more difference. San Jose scale multiplies much more rapidly, will kill trees in a few years and is much more injurious when it becomes prevalent. The owner should get the jump on it at once, but the oyster shell can be let run several years and the trees sprayed only occasionally.

MR. KERN: How will one shrub or tree transmit that San Jose scale to another one?

DR. FRACKER: The scale you see is a waxy covering over a minute insect. The young are born alive in the spring. They have an active stage of from twelve to twenty-four hours. Those young, as they are born, are so small that on a white piece of paper with close examination you could just barely detect a speck there. I remember in the laboratory a few years ago being able to detect a most minute speck but by using a microscope could see an insect running as fast as it could go. Of course the microscope increased the speed as it did the size of the insect.

These young crawl onto the feet of birds; they are blown from

one tree to another. If there are tall trees over a hedge or a nursery, if the tall trees are infested the hedge or nursery is almost sure to be from the scale being blown off. In cities we find it most largely on trees around chicken yards. Sparrows are frequently around chickens yards, they fly down and up and over to the next chicken yard. In surveying from one property to another we can jump two or three and come to another where there is a chicken yard and it is present. It is not carried by sparrows any long distances, however. I do not believe we are getting any material spread from infested sections of Illinois by that means but for perhaps one hundred yards or a quarter of a mile it is a most effective way of introduction. The way it would be introduced into orchards would be from nursery stock purchased by yourself or your neighbors. Mostly it is spread by the wind and birds.

MR. HAUSER: Any danger of getting it on western fruit?

DR. FRACKER: The western apples are carefully graded and the San Jose scale mark is one of the surest things for throwing an apple out of the grade valuable enough to ship east.

MR. KERN: Is there any danger, then, if I had an orchard infested, with a farm adjoining forty or eighty rods from me being infested through birds?

DR. FRACKER: Yes. When it gets into a general fruit growing district, as the fruit growing districts of the Ohio river valley, southern Illinois and Indiana, it is practically impossible to keep any orchard free. They have to be sprayed every year. A rough guide that has been used in the west is that San Jose increases the cost of production 15 per cent. That is just rough. The dormant spray is the most expensive spray that you can put on. If San Jose is present the spray may have to be applied each year.

MR. TOOLE: I was up at the Minnesota meeting last year and heard the talk of the entomologist up there and the impression was given out that Minnesota was practically free but a great deal of it was present in Wisconsin. It led the Minnesota people present to believe that it was so prevalent here that it would be rather dangerous to buy nursery stock here. Is the situation so bad?

DR. FRACKER: The Entomology Department of Minnesota has become alarmed on account of the situation at La Crosse. We had gone at the La Crosse problem in the same way we did at Beloit. Why we did not get the same 100 per cent results there I do not know. Immediately across the river from La Crosse is a fruit district and the growers are aware of the fact that scale is present in this one place. They know it has survived two years. In Beloit it was completely eradicated. The fact that the park

board themselves had never heard of it and did not take the situation very seriously is one factor. However, that is the only place where San Jose scale is present in Wisconsin within seventy-five miles of the Minnesota line anywhere. The only danger of securing San Jose scale in stock from Wisconsin nurseries is when Wisconsin nurseries are acting as dealers and passing on stock from other states. As you know, Wisconsin nurseries buy a large number of their apple trees which are grown in other states. Not all of that stock is seen by our inspectors, perhaps we would not catch individual scales if it was; but many Wisconsin nurseries handle stock from other states and occasionally some that has been infested. In fact *every* year we pick up San Jose scale in from one to nine different locations, in different parts of the state. Those are introductions.

GREETINGS

JOHN D. JONES, JR., *Commissioner of Agriculture*

(From Reporter's Transcript)

Mr. Chairman, Ladies and Gentlemen of the State Horticultural Society: I wonder just what sort of message it would be possible for the Commissioner of Agriculture to deliver to this assembly which might be of interest. Wisconsin, of course, is noted for its agricultural achievements, particularly along dairy lines. To such an extent is that true that Wisconsin today is the outstanding dairy state in the nation, having supplanted some of the older states, notably New York; being far in the lead of Minnesota and a state to which those interested in dairy cattle and in dairy products come from all over the United States and from various parts of the world. Into my office this morning came a man who had just sold two pure-bred animals to Japan and wanted to get the necessary papers in order that those animals might be shipped.

In view of this outstanding position that dairying occupies in the state of Wisconsin have we a right to assume that the business of fruit growing—those interested in fruits and flowers which beautify—have they much of a place in our agricultural scheme? I want to say to you ladies and gentlemen—and I am glad that the ladies are with us because their presence always has a salutory effect on all deliberations, refining and seasoning, flavoring and sometimes spicing them, if you please. In fact, you recall the story of the man who was asked if he ever lost con-

trol of his car while driving and his reply was, "Only when my wife occupies the rear seat" Se we recognize the prominent place women have.

The significant point from our viewpoint in the department of agriculture is this: We believe that in order to succeed, agriculture in Wisconsin must be on a sound basis, that we must have diversification. We take the position that live stock development must be the basic form of agricultural activity in this state but we find that where the dairy farmer, if you please, incorporates into his scheme of things some sort of a cash crop—it may be the growing of peas in Dodge county or tobacco in Dane county, potatoes in Waupaca or cabbages in Racine county—where that is done the individual farmer is in a stronger position financially than where he devotes his efforts along one line, and we are advising live stock men throughout the state to incorporate into their individual plans production of some cash crop; and it is our conclusion that fruit growing and the sale of fruit furnishes great possibilities in the way of this diversification of which we speak. We believe that any farmer who will engage in such a plan in the long run and through a term of years will enjoy a greater net income, his economic position will be stronger, and that as a result he and his wife and his family will enjoy a higher standard of living than otherwise. The man and his wife and his children are the objects we have in view because, while alfalfa growing is important, while better stock is important, while the introduction of the silo is important, nevertheless in the last analysis, any kind of agricultural work that is justified is the sort that keeps in mind the betterment of the conditions of the farmer and his wife and his children.

Now there are one or two aspects of this fruit growing I just want to touch upon briefly. In the first place, in going into these various Madison stores to buy apples I am invariably told, if I ask for Wisconsin apples, that they do not handle Wisconsin apples; that Wisconsin apples are not for sale in the stores of Madison; that if I want an apple I must buy one that was grown in Washington or Oregon, or possibly New York (although the western apple seems to have supplanted to a large degree the eastern apples, notably the Baldwins that were found so commonly in our stores a few years ago) and I am wondering if our fruit growers of this state are not overlooking an opportunity. Of course you know the answer to that better than I do. I am

wondering whether we cannot supply some of the fruit for which there is a demand in Wisconsin today. I recall my grandfather who was something of a grafter (you must take that literally) and I remember a tree in the orchard that he had set out bearing three or four different kinds of apples and wondering at different varieties growing on that one tree. He was interested in his orchard, in his plum trees, pear trees, and his apple trees. He had the Greenings and the old-fashioned Russett, the Golden Russett, the Red Astrachan that seems to have become nearly extinct now. Perhaps it is fortunate, for I believe that the Red Astrachan apples were the cause of more stomach aches than any other fruit I know of. But along those sandy stretches and on those black soils of Racine county, not particularly adapted to good fruit production, they produced fruit of a particular variety, the kind that could be put down in the cellar and used in the winter. I am wondering and I assume that it is possible that the right fruit can be produced in considerable quantity right here in Wisconsin to take care of our local needs. You commercial fruit growers who are here where the markets are, you do not have to go over this high freight rate barrier that the grower of western apples must surmount before he can reach the consumer of his product. At this time these high freight rates are having a peculiar effect, a re-adjustment, re-arrangement of industry, and affecting agricultural products. For instance, in years past alfalfa was shipped very commonly from the western growers to the dairy farmers of New England. With these high freight rates the western grower cannot send it on to the New England market. As a result agriculture in New England is being stimulated. The New England dairymen must grow the alfalfa down there to supply his own wants. New England, as you know, in the past has had probably a monopoly on the manufacture of boots and shoes. It was found profitable to take the hides from Chicago, the greatest meat packing center in the world, and ship them to New England for the manufacture into boots and shoes, ship them back to the central west to be worn here; and the owners of industry are finding that they cannot profitably do that any longer and the result is that there is a movement of industry from New England to the central west, so that the shoes worn here will be made here where the natural source of the raw material is. That means we are going to have enlarged markets for not only cheese, butter and condensed milk but for fruit, right at our

door, a market which belongs to the fruit growers of Wisconsin, and I want to take this occasion to suggest that if this business of fruit growing is developed as the pea packing industry has been developed, as the growing of tobacco and cabbage and potatoes have been developed, it will not only put our state in a much sounder position financially but it will enable us, who engage in this production, to market what we produce right here at home; and that is one of the strategic advantages that Wisconsin enjoys on the map today, nearness to the place where the markets are.

Just a word about our state fair. The state fair of course appeals to a wide variety of interests. The attempt is to fairly interpret the agricultural and industrial development of this state. We are attempting to make it represent what is going on in Wisconsin, be it industrial activity or agricultural activity. That is one of the reasons we took the position we did when asked to dispense with the state fair for one year and put on the dairy show, a wonderful show. We said, we cannot do that because we have a state fair that is in touch with a great variety of interests besides the dairy interest. We do not believe that it would be fair, in accord with the interests of the people of the state to ask these various other interests to step aside for one year and concentrate entirely on the dairy exposition, because we wish through our state fair to interest and keep interested all of the various projects that make Wisconsin what it is today; and we want to suggest that perhaps it would be well to so arrange your horticultural show there so that it tells the story of the Wisconsin apple and the Wisconsin cherry, tells it particularly to the consumers. Tell the story of the virtues of that fruit to the consumers of this state so that when they go to the grocery store to buy apples or cherries or canned peas they are going to ask for Wisconsin peas, cherries and apples.

In conclusion: If we can arouse this unified interest in all the things that make agriculture what it is in the state if we can get a larger viewpoint for the average man, if we can get a greater appreciation of agriculture and industry and labor and commerce, and their interdependence, which should be our aim and ambition, I want to tell you frankly that I am satisfied we can make of this state of Wisconsin, which is one of the best, we can make an empire here in the central west. I make that statement without any reservations.

I trust that your deliberations have been profitable as well as pleasant. It has been said on numerous occasions that some of the best agricultural thought in the state is found in these horticultural circles; some of the highest agricultural intelligence that we have in the state is found right here among the men and women who are engaged in this work, and I wish to extend the greetings of the state department of agriculture to you, assuring you that through our division of entomology, headed by Dr. S. B. Fracker, the department is attempting to be of service to you men and women who are doing the work out through the state. I want you to feel that when you have problems, that the state has established and is maintaining this department with the expectation that it will be of service to you, and I trust that all of you will feel free at all times to avail yourselves of whatever service we may be in a position to render.

THE BILLBOARDS AS A NUISANCE

MRS. A. C. NEVILLE

(From Reporter's Transcript)

My subject is to be on the billboard as a nuisance. We all feel exactly the same and so do the advertisers themselves. I think, with very few exceptions, there is not an advertiser who approves of them, but he must do as his neighbors, or his competitors do.

It is unnecessary for me to say that nature has been very lavish in giving to Wisconsin a glorious beauty. There is not another state anywhere in the United States that is as beautiful as Wisconsin. What other state has such a variety and such beautiful boundaries? On the east, Lake Michigan; on the north a little of Lake Superior and then Chequamegon Bay and the Apostle Islands, and then on the west, the Mississippi; while, coursing its way across the state, we have the Wisconsin river and then on the east again, we have ninety miles of beauty in Green Bay. All along the east coast the deep indentations that give us Sturgeon Bay; the little ones that give us the smaller bays and then the bluffs. On that peninsula is one of our most beautiful state parks and I believe we are going to have a national park there because the government owns National bluff and it only needs another name to make it a national park. Our Wisconsin Magazine said we had fifteen thousand lakes scattered around over the

state and almost as many named streams. This gives to Wisconsin its great beauty.

Now the question arises, Who Owns the Landscape? If you were to answer, I know what you would say, "It belongs to the people of Wisconsin," but the billboard men will tell you that we are interfering with business; in fact, I have known suits to be brought against women's organizations which have removed billboards and have used their influence against them. One has to be very careful how one interferes with the business of advertising and the billboard men.

I was asked to speak a year ago at the Green Bay Advertising Club and tell why women objected to billboards, and preceding me was a representative of the Thos. Cusack Company, and we were proposing to prohibit poster advertising in Green Bay. The movement has in fact, already been started there. We have a committee called the city beautiful committee. Last September at our first meeting we had an open forum on billboard advertising; the speakers were either for or against. We had a representative of one of the biggest wholesale grocers of the United States and in this state they advertise extensively on billboards. We had there a representative of the biggest department store, whose owner never has used the billboard. The manager said, "we have had the biggest business in the history of the store and did not advertise on billboards." We have also a large firm which had been advertising on billboards but are now sending our notices to cancel contracts as soon as the lease expires. We had a remarkably interesting discussion.

From one talk there grew a movement for a memorial highway. From Green Bay to DePere there is five miles along the river which is lined with billboards. It was properly a memorial road. A committee of three women and six men was appointed. Everybody asked, Who named this a memorial road? and so we went to our Brown county rural planning committee and asked them if they would name it, and they did. In the resolution they adopted that road is to be cleared of everything that is unsightly, beginning with the billboards. We had the right backing from the county plan commission. Now we have begun the clearing of that road of the billboards and it is a very interesting piece of work, and we are beginning in this way: We have had an agreement drawn up and have asked every advertiser on that road to sign that agreement that he will remove his advertising

from that road provided all other advertisers will do the same. When I left Green Bay yesterday the contract was mailed to me and every advertiser on that road has signed that agreement. Next is the landowner. There are three different aspects of billboard advertising, the landowner, the billboard owner, and the advertisers. Every one of the advertisers has agreed they will not renew their contracts when they come due. The landowners we will approach through the loyalty legion. We are going to ask everyone when their lease expires to promise they will not renew that lease. This is the result of that meeting which we held at the Green Bay Advertising Club and at which Mr. Cusick's representative preceded me and at which he said that it was a great mistake, that we were trying to remove the advertisement. We are not trying to do away with advertising entirely. It has come to stay; the only thing is to regulate it. Move to some location where they don't interfere with the scenery, preferably civic centers, business centers. They said that was as traveled a road as there is in the state of Wisconsin and I know that crowds pour over it all summer long. He felt that it belonged to the advertiser and I say this, Who made that road of value to the advertiser? When it was an ordinary highway it was of no value to the advertiser at all until they put on concrete and made it one of our Highway Commission's fine roads, it was of no value. Who paid for that road? Who paid for the expense of building that road, that made it so valuable to the advertiser? Is not the advertiser making his profit on our investment?

There are several ways in which we hope to get rid of the billboards in Wisconsin. The next speaker will tell you of how their organization, the Poster Advertising Company, proposes to get those billboards off from the highway, and if it can be accomplished it simply is going to be a wonderful revolution. Ridicule is going to do a great deal of it. I wonder if you remember when Chamberlain, in England, was trying to have England adopt a certain line of work? He lost, and he died from his over-exertions in the cause. The effort was lost through the work of a brilliant cartoonist. The cartoonists have now turned their efforts toward billboard advertising. By the way, we don't say billboards any more, we say poster boards. Now the cartoonists are helping. You probably remember that cartoon of a road lined with billboards, tourists passing between

them, and at the bottom the words, "See America First." Another, Mr. Cole, I think, had in his paper a beautiful scene, an old farmer and his family enjoying that view. The next summer they went sixty miles out of their way to see that same view and there were nothing but the same old billboards that he left at home, nothing else left.

I wrote to a certain lawyer in Boston, who had been instrumental in removing the billboards from the right-of-way of the Pennsylvania Railroad, and asked him how he accomplished it. He said, "Yes, from the right-of-way but they went over the fences. I went from Philadelphia to New York and counted eighteen hundred of them on one side of the railroad alone."

So the women have taken a hand and we are accomplishing something. The New York Times said that the women have put the first dents into billboard advertising. We are tired of the attempt to secure legislation. We are going to stop that. The friends of our native landscape had a bill before the legislature last winter. The Wisconsin Federation of Women's Clubs had another bill, the one of the friends really amounted to a great deal more and was much more interesting, but was never reported out of the committee, I believe. The one of the Women's Clubs was a perfectly inocuous kind of a bill, it merely asked that all billboards should be removed from the highway. The bill said they would no longer allow them along the highway and they must be removed. That was an unwise thing, but it was just a feeler. Any county highway commissioner can remove all billboards within his county, if he chooses to do so. We have not had any on the highways of Brown county for a year and a half and if one creeps in there all we do is to send a line to the town chairman and the very next day it is gone.

Sheboygan county is now tearing down its billboards. There was a great deal made of what Minnesota did. Now that bill of ours was reported out and passed by a good majority of the senate, but the assembly would have none of it and it was lost there. We are now going to see what we can do by the education of the advertiser himself, and of the people. I remember when I was in school, the first thing I remember of Archimedes was when he felt the value of the lever and said, "If I had a foot outside the earth, I could move the whole world." As I grew older I thought about it and thought education was the lever, and

since I have been interested in billboards I think educating public opinion is going to do it.

That is what we women are seeking to obtain. We have a national organization for the restricting of outdoor advertising and that is, that billboards shall be placed in business centers; taken away from highways and residential districts where they impair the value of the property and particularly of the home. What is the object of that? They have a committee—it started in a movement in Glens Falls, New York—and this committee has now been formed and instead of being a New York committee as in the first place it has been made a national committee with Mrs. Longstar, president. Wisconsin has a representative on that committee. They proposed, with all courtesy, all kindness, all consideration, to ask every national advertiser in America to remove their advertising from highways and residence districts, and last December that was begun. We sent out from Wisconsin five hundred letters; in January we will send a thousand letters; to national advertisers. Those advertisers are selected by this national society and they write to me, as chairman of the outdoor art committee of the state federation, and I send that list out to every one of the women appointed on the billboard committee.

When Tagore was in this country he said, when in New York, "If we put up such monstrosities as these you would send missionaries to convert us."

I wanted to tell a story when we were speaking of the beauties of Wisconsin of a gentleman I heard speak of the Yellowstone Park and he said that one evening after a busy day of sightseeing, sixty people were gathered in the lounge of the hotel. They were looking at the sidewalls and ceiling and one said, "Where, except in a western state, would you see such beautifully grained wood as in those panels?" The guide, standing near, said, "Yes, where else? That is Wisconsin wood." A man from a farther western state said, "Of all the beauty we have seen here today, with the exception of the geysers, we have not seen anything but what we could see in one day's run in Wisconsin." After hearing that I have no doubt many of those tourists came here to see for themselves.

In Colorado, probably you will remember, when they banned advertising on the rocks and Colorado thought that to induce business in Colorado they must allow that. By some mistake an

artist got into the legislature and he brought in a bill which prohibited such advertising and called for the removal of that which was already there. It was almost lost in the ridicule. When he got an opportunity to speak, he said, "Gentlemen, Colorado has two things to sell. One is silver, the other is scenery." Those signs were painted out and I have not yet heard that Colorado has gone bankrupt.

When we see what we have in the way of beautiful scenery, wasn't it natural that the highway commission said, "After we have left, the tourists will be here." Are they coming year after year to see the same billboards? How long will people come when the landscape is covered up? They want to have the scenery where the tourist can see it. In a few years from now it is going to be so that our Wisconsin roads—the ugliness—is going to increase in our state, and people are not coming here just to see our billboards.

HINTS TO THE AMATEUR WHO EXHIBITS FLOWERS AT FAIRS

MRS. C. E. STRONG

(From Reporter's Transcript)

I really feel as though it was sort of superfluous to speak on exhibiting flowers at the state fair, but it is only because I am so very much interested in the state fair and in the amateur department especially. It does not seem to me that people realize what flowers do at the state fair, and because I was an exhibitor there seventeen years before I took charge, four years ago, of the amateur department, I think I can talk from both sides.

First, read the premium list. So many come there with flowers and say, "Why, it was in the premium list a year or so ago," when I tell them there is no place for their exhibit. We are endeavoring to make our department much better and in order to do that we must change things, and we do; so that every year the premiums are different. So it is perfectly necessary that anyone should read the premium list thoroughly and find out just how many of the varieties and what sorts of exhibits are going to be on display, just how many different flowers are to be put in each vase, unless it is specified just a display of flowers. Then,

of course, the day has gone by when most any kind of an exhibit will win a premium, or even notice in the amateur department of the state fair, I am glad to say.

Every exhibitor should be very careful first, that they buy the very best seeds, take excellent care of their flowers during the summer and then pick out the biggest blossoms with the longest stems, the most perfect blossoms, and carefully arrange them in the really beautiful vases. (We don't put up our flowers in fruit jars any more). We have very artistic green and glass vases in which we put up our display of flowers.

It is well to bring the flowers there early enough so that you have sufficient time to put them up properly. One of the things we are quite careful about is that the vases should not be overcrowded and that if you have a display of annuals that you try to get those that are lasting. Some of the newer varieties are very beautiful and are lasting if they are picked very early in the morning. In fact, all flowers for exhibit I think should be cut very early in the morning before the sun shines out very hot, and the foliage stripped off. When we arrange them for our homes we do not care about having all the foliage stripped off, but your flowers will last longer. Bring some extra foliage, don't have it on your blossoms. If you live near Milwaukee it is well to put your flowers in water. If not so near, it is better to bring them earlier without having been in water at all, so that the wet stems will not spoil your blossoms.

I think that everything I have said with the exception of reading your premium list, was told in a very excellent paper last year by one of the exhibitors, so I am not going to say much more about exhibiting flowers, but I want to tell you a little bit about our annual exhibit. Our exhibitors now are not thinking so much about the premiums as when I was an exhibitor. They are thinking now about how beautiful the exhibit can be, how beautiful the flowers are and there is a very keen but friendly competition among the exhibitors. They are better friends. They have found they have something in common. All come with the idea that they are going to win if possible, but with the best kind of spirit and should they lose they go home with the determination to come back another year. So any time that I make a suggestion that we change our exhibit so that the people coming there get the most out of it, my exhibitors are glad to cooperate with me. As the other exhibits are educational, we feel our flowers

are also. We want people to grow more flowers. That is one reason why I was glad to take the amateur department because we had always been under the supervision of the florists and, while we are good friends, they want people to buy more flowers, not grow them; and while we really work together the amateur department wants people to grow more flowers. We want to see more flowers grown in the cities, on the farms. Make real homes of them. The brightest and the sweetest memory I have is the flower garden that my mother had and I want others to have that same feeling. I am glad when the children come there and talk about the flowers; when they say to their parents, "Aren't those beautiful. Couldn't we have a flower garden at home?" And sometimes their mother will say apologetically to me, "We have considerable to do on a farm and we have not time." But there are many easily grown and we are specializing at present in showing those that are very easily grown, that last all summer long without very much care. We know that once they begin to grow flowers that they won't stop and the home will be more beautiful; the children will enjoy it more and there are few women who do not love flowers. I am glad that more of the men are becoming interested also. In the amateur department we are trying to put up our flowers in "displays." Displays of annuals, of perennials, trying to induce people to grow more perennials because there are lots of people who say they cannot have perennials, they do not own their home or homes. Those are just the sort of people we want to reach. We want them just to grow perennials. We don't want them to move so much. We want them to have a home of their own. Anyone who gets the perennial craze proceeds immediately to get a home of their own, they don't want to grow them for a landlord.

We are trying to feature table decorations. The florists, of course, have them in their own way. The amateurs have simple ones that anyone can have. I think the dining table decorations help. I was standing listening one day, people are very interesting to me, when a mother with two children came along. One little girl said, "Aren't they pretty!" "Yes, but it's lots of work," the mother answered. The children stopped, but she walked on for a way, and then waited for them. I followed slowly around and one little girl said, "Looks like a party table, don't it?" and the other answered, "Yes, just exactly. My, it must be just lovely to eat at a party table every day."

The mother looked at them and then at me. She went back to the children. "Do you think it would be lovely to eat at a party table every day? We have some flowers, we might grow more," and the little girl answered, "I don't think I would care for anything else if we could have flowers every day. She looked at me and said, "I did not think my children cared for anything else except what there was to eat. I am glad I came to the fair today." I said, "Do you remember what sort of a table your mother had? Your children are not a bit different than you. Just the kind of a home you had, the kind of a table, your children will remember it. They will think back the same as you used to do."

And that is what we are trying to have people do, not just let the best part of their lives go by. Life is not making a lot of money, it is being happy every single day and a beautiful home does not mean an expensive home, it does not mean wonderful furniture and expensive dishes and the finest of linen and all that sort of thing. It just means really beauty, just like flowers. You can have them in your home and that is the lesson the amateur department is trying to teach. And I really think we are succeeding. I think we are teaching men and women in that part of the fair.

In traveling about the country we see so many, many farms with new houses and barns and big orchards and a very neglected dooryard. Those are the people that we are trying to influence to think that they have time enough to have a few flowers. Last year we had a very beautiful display of Celosia. A man and a woman came in. I followed them up one side and he never looked at the tables. She did. He looked at the apples; never glanced at the flowers; never looked at anything until he got to the end and happened to notice the Celosia. He stood and looked at it, eyes as hard as nails, as though he cared for nothing but money. She didn't look that way, but she looked as though he thought that was all there was in life. She finally said, rather timidly, "Pretty, isn't it?" "Yes," he answered "Mother used to have a bed like that in the front yard. Is it easy to grow?" "Yes, seeds very inexpensive and lasts a long time." "I wouldn't mind if you had a bed like that in the front yard, mother always used to have them." So, as I say, I really think the amateur department at the state fair is educational and

helpful and we hope we are going to have a lot of new exhibitors. I hope there may be somebody here today who will come and help us and help other people.

AMATEUR ROSE GROWING

MRS. CARL B. LIEDERSDORF, Milwaukee

It is, I think, presuming of me to try to tell you who know so much better, how to grow roses, but our success with a few varieties is my excuse for being here. I said "our success" quite intentionally, for I wish to include my husband, to whom the credit for our wonderful roses is almost entirely due.

Perhaps the chief reason why there are not more rose gardens in the vicinity of Milwaukee is due to the fear that the soil is too heavy, but our experience is that given wood ashes, leaf mold, pigeon manure, plus a little labor, that fear is not justified.

Our beds, most of them not in particularly well sheltered places, but well drained, are dug either in the spring or fall to a depth of about 18 inches, and filled in with two or more inches of leaf mold. Then the soil is mixed with wood ashes and pigeon manure, because we happen to have it, using as much of the top soil as possible. In the spring of the year, and as early as the weather will permit, we carefully plant our roses about 12 to 18 inches apart, first cutting off any bruised or broken roots. After planting, we prune back all main stems, leaving about 6 or 7 inches, and cut away entirely the weak ones. Each plant is then given a thorough soaking.

We think that it is advisable for amateurs to buy only the best stock, and plants that are at least two years old, otherwise one has to wait too long for results. To beginners that is discouraging.

Let me say here, in regard to watering, that during the entire season we resort to artificial watering only when absolutely necessary. Give plenty of water when needed, then let that suffice until needed again, when another thorough soaking should be given.

As the plants develop, the ground is cultivated frequently. When the buds appear, more pigeon manure is dug in between the rows, and a little later a top dressing of wood ashes is added.

At the end of each stem at least three buds will appear, and it is then imperative to do what seems to most amateurs unnecessary—namely, disbud. If large, strong blossoms are desired, only one bud should be left on a stem. Occasionally, the stem separates into two or more tips, each having several buds. If the tips are strong, they may be left, but only one bud at the end of each if they are to properly mature.

In this manner, we have grown roses with large blossoms on strong, sturdy stems from 24 to 30 inches long—not two or three, but dozens of Hybrid Tea Roses, Wards, Premiers, Columbias, and best of all, Oephelias. Each year we hope to add one or two new varieties to our list.

There is only one thing that mars one's joy in rose growing, but that is not peculiar to roses alone, but to every flower. I refer to the host of insects that are ever ready to destroy what you so carefully have tried to develop, and each year seems to add a new variety to conquer.

In our experience, arsenate of lead with a little nicotine added has proven to be the most efficacious, the most satisfactory of all sprays. To be sure, it does leave a white deposit on the leaves, but that can easily be removed with a little water. It is well to spray frequently.

In picking the roses, do not be afraid to cut off most of the stem, as it will give the plant an opportunity to develop new, healthy growth more rapidly. If long stems are left, too much vitality is required to make new shoots, and the result is usually weak stems and small blossoms.

Cut the flowers during the early morning, putting them in a deep container filled with cold water, and place them in a cool, dark room for a few hours. If cut while still in the bud, you will then be able to keep them for many days.

When the rose bushes have finished their first blooming—usually in July—each stem is again carefully pruned back to three or four eyes, and the processes of fertilizing, cultivating, and spraying are repeated. In a few weeks you will be rewarded with roses just as large, just as strong, and just as many as you had in June, and they will continue to blossom even after a light frost. What other flower can equal this record

When Jack Frost has made it quite evident that he has come to stay, you reluctantly cut off the many buds that remain on the bushes, remembering not to prune back too far, for in the spring

you will again have to cut off an inch or two of stem that has been winterkilled.

After the ground is frozen, earth is heaped around the bushes at a depth of about 5 or 6 inches. Then the plants are entirely covered with leaves or straw. Covering too early is a mistake, as we learned last year. The field mice wintered in one of our rose beds, and destroyed about twenty bushes.

In the spring we do not remove all the covering at one time. but gradually as the weather moderates and all danger of frost is past. With the exception of those the mice destroyed, we lose only a few bushes—say three or four out of two hundred fifty—each year.

Have I made rose growing seem easy or difficult, I wonder. I hope not the latter, for that is not the impression I wish to leave with you. There are no mysteries in growing roses. We feel that, given fair soil to start with, by frequent fertilization, constant cultivation, careful pruning, and generous spraying, anyone can raise roses as beautiful as those grown in our garden.

MEMORIAL TREE PLANTING

BY J. W. ROE

Since the World War a desire to perpetuate the memory of the brave men who sacrificed their lives to uphold the honor of their country found accent in the planting of Memorial Trees.

These trees are supposed to carry on for years to come, by their usefulness, strength and beauty, the memory of these men.

When we consider what is expected of these memorial trees we must realize that they must be selected with care and placed where they are to grow with still greater care.

I was asked to air my views on the subject of planting Memorial Trees because I have criticized the way enthusiasts have gone about it.

Like in the many of the so-called war activities these enthusiasts are good beginners but are poor finishers. They get an inspiration, go before some business men's club and raise the money, buy some trees, get ditch diggers to plant them, get the newspapers to take notice of their memorial speeches then promptly forget all about the trees, but have the great satisfaction of having put something over.

Usually a commercial highway was selected and the trees planted under a network of telephone wires lining both sides of the road where the wires were within sixteen feet of the ground. Here, without care whatever, these memorial trees are expected to grow and form a beautiful avenue of trees. They will never become anything but an eye sore if they escape drought and live to reach the wires.

Unless the laws are changed, trees growing along the highway are subject to the whims of the state or county road commissioners. They may be cut by them or by landowners, and they can be trimmed and mutilated by wiremen to suit their convenience.

Trees along our highways are loaded with billboards. This may be instructive and a good advertising feature for a few, but ought not memorial trees remind the wayfarer of other things than Coco Cola, Wrigley's Gum and Bull Durham tobacco?

So I say, unless we change our laws, memorial trees have no place along the highway.

A more secure environment should be sought, and can be found in City or Country Parks or on the grounds of public buildings. Trees that we wish to have live through many generations must have a legal right to the ground in which they grow, and also where someone will be responsible for their care.

If trees planted for memorial purposes do not have permanent rights to live and spread their roots and branches unhindered, then it will be a farce to dedicate such trees to the memory of our dead.

Our State Horticultural Society could be active in securing ground in parks to serve this purpose. They can also interest and advise local societies in tree planting.

What more lasting gift may be given to their city or county by one of the business men's clubs than a fine landscape planting to decorate the grounds of some public building or a planting in one of the parks.

The Kiwanis Club, of Oshkosh, is considering a plan to give a memorial of conifers to beautify their Public Library grounds which will be a gift to the City of Oshkosh. It will be a memorial planting and at the same time an arboretum of educational value. Evergreens of many kinds native to the state will be represented and both the common and the Latin names will be placed on the markers.

Local societies could do good work to bring about interest in arbor culture if they took more interest in the plantings of their home parks. Varieties already existing should be marked and suggestions made as to other trees and shrubs not in evidence but hardy and attractive. Also trees and shrubs bearing berries attractive to birds both winter and summer could be used.

In our parks places might be set aside for planting Memorial Trees, all coming under the supervision of the park caretaker. Here Memorial Trees could safely be planted with every assurance of protection and care. Trees could be dedicated to our soldiers, our great men, and our prominent citizens.

There are also public fractions of land occuring where the tract of land in question is too small for building. Some of these might be utilized to grow a tree or more, and through its shade and beauty, become a welcome memorial.

I think it is the province of the Horticultural Society to lead in the movement toward country parks. There are beautiful tracts of land in all our counties. A forest of virgin trees, a grove on a running stream, or beside a lake, ought to be saved and held in trust so that future generations will be able to enjoy them as we do. The hickory grove, the swimming hole, some of the wild flowers and vegetation ought to be preserved.

Our local society is going to ask the county board to consider a proposition to take care of and perhaps add land to create a little park along Lake Winnebago, where the county highway runs for a short distance along the shore of the lake. Excepting at the City Park, there is no other place where the public have rights to the lake frontage. Here picnic parties have come to eat their luncheon, to roast corn and to enjoy the shade of several old trees. We are going to lose this lovely old picnic grounds unless some work is done to protect it from the erosion of the lake. This useful and beautiful little spot would make a splendid memorial.

To beautify the highway was the motive for planting trees along the roadside. Now it seems to me that on our main cement roads no one wants anything but a clear view, all clear of trees, shrubs and weeds in winter and summer. These roads are mainly for commercial uses and speedy transportation from one place to another, and beauty is little appreciated by its travelers. On side roads where travel is slower and less precarious let us

turn our energies of beautifying the roadside, where it will be most appreciated.

Side roads may be made interesting by roadside planting could the adjacent landowners be gotten to cooperate and possibly receive aid from some source in helping with the maintenance.

For Memorial Trees I would suggest that we select trees known to be long lived. The kind to be decided upon by the location where it is to be planted; whether it is to be a dwarf wild Crab, Thorn, a tall Spruce or Pine, a spreading Oak, or Elm. Let it be in keeping with the surrounding landscape.

The spacing should be ample to allow for growth to its natural maturity, whatever kind selected.

In conclusion I will sum up in a few words what is wanted in Memorial Planting:

A permanent *place,*
Long Lived trees,
Proper spacing, planting, and care.

HORTICULTURE IN WISCONSIN

BY WILLIAM TOOLE, SR.

Our knowledge of progress of horticultural thought and practice in the state of Wisconsin, is derived largely from the records of the activities of our Wisconsin State Horticultural Society.

The forerunner of our State Horticultural Society was a fruit growers' union, which suspended during the civil war, and afterwards reorganized as the Wisconsin State Horticultural Society.

While the leading horticultural interest of those pioneers was in the line of fruit growing, they gave thought also to decorative horticulture, and they soon found that they must test for hardiness, and adaptation to our climate, varieties of ornamentals, as well as of fruit trees, shrubs and plants.

Long experience of custom has taught us that the practical use of the term horticulture, must be much broader than the dictionary definition of the word implies. The literature of our society considers as within its range of influence for betterment, orchard and small fruit culture, vegetable gardening, amateur and commercial, flower culture in annuals, perennials, and shrubs, landscape art as applied to home surroundings, highways, parks

and cemeteries, commercial floriculture to a small but increasing extent, just a little of forestry, a better knowledge of our native flora, the saving of our wild flowers in their natural homes, and also their domestication.

In later years our society has been a leader in influence, for the preservation of valuable features of our native landscape, and in promoting a more general appreciation of what Nature has done to make Wisconsin beautiful.

In the early days leading thought was given to testing varieties, in their adaptation to our climate, soils, and special locations. Orchards were necessarily small because many adverse experiences had taught these pioneer fruit growers that they must make cautious ventures, until dependable varieties had been tested, consequently our knowledge of apple growing in Wisconsin has been acquired in these small orchards, which are properly included in the class called farm orchards, which embrace many which because of neglect have been a menace to fruit growing, and a disgrace to horticulture.

Through our State Horticultural Society has been assembled the knowledge of fruit growing which had been acquired by these early and later pioneers. These continued experiences, and our trial orchards, have given encouragement for the establishment of successful commercial orcharding in this state.

When we consider the continued interest in the past in fruit growing, with the present importance in quantity production, we must concede leading thought to the interests of fruit growers, but we should also realize the relative importance of other phases of horticulture. While all farm homes cannot have orchards, all can have vegetable, small fruit, and flower gardens, as well as can all suburban homes, and many city residences.

There are very few persons with souls so dead that they cannot realize the value of flowering plants, trees and shrubs, in beautifying home surroundings. Probably statistics are available making possible to estimate the value of the fruit products of Wisconsin, but who can estimate the value of all of the plantings to beautify the homes of the state?

If we could make a summary of the value of the lawns, trees, shrubs, and herbaceous plants, with the care bestowed on them, our valuations of investments in fruit production would be greatly overshadowed by the values involved in Decorative Horticulture.

We, of course, should not only consider ordinary homes but also the estates of the wealthy, with the work of their private gardeners, parks, cemeteries and commercial florists. Our society has not been very helpful to the private gardeners but we appreciate their helpfulness to us. We are pleased with the evidences of increased appreciation of reciprocal mutual interests between our society and the commercial florists.

A goodly share of the literature of our society has been devoted to consideration of selection of varieties, culture, disease suppression, and best arrangement of plantings. May our society give increasing thought to saving our native flora, as well as appreciation of the decorative value of our native vegetation. Because the natural beauties of the Wisconsin landscape is so appreciated by our friends from other states, commercialism is prompting the acquiring by private ownership, natural beauty places, thus endangering the privilege of all the people in the enjoyment of these places. At the present time there is no other organization in the state which can do so much as our society to awaken a general interest in the need for action, to save for the people the places of scenic interest which nature has so bountifully provided.

Of course we do not forget that the agricultural and other papers of the state have been helpful to promote horticultural progress in the state, and we realize the value of the work of the horticultural department of our state agricultural college.

And, too, we should not overlook the local horticultural societies, and should give due credit to the nursery agents. Also the grand showing each year which we have helped the state fair to make, but with all, our Wisconsin State Horticultural Society has been the leading promoter.

Whatever our society has accomplished has been through competitive exhibitions to stimulate efforts for improvement, and illustrate the progress which has been made, through our trial orchards, through meetings for the reading of papers, giving lectures and addresses, and discussion, and exchange of experiences. These have been strengthened and made of permanent value and far-reaching influence through the literature of our society—our monthly paper, occasional bulletins and the annual reports of our society.

Without this literature, the value of our efforts would be greatly limited. We greatly value our horticultural magazine

as a medium of exchange of up-to-date knowledge, and we who consider ourselves active members of the society have not contributed the help that we should, to keep it up to standard.

The bulletins which have been issued are valuable to keep for reference. The annual report of our society gives the summary of our horticultural experiences. Without it our meetings would be of much less value to those who attend them and have very little influence for those who do not attend.

Those who do attend the meetings should freely make note of the many good things learned through conversation with other members between sessions.

During these later years of high prices, the cost of maintaining our State Horticultural Society has greatly increased, and there has been no increase of income; of course there has been need for economy in management. When we compare the later annual reports with those of a few years ago, it seems as if the reports had received the greatest trimming. In these days of demands for economy, we read a great deal about budgets, to systematize the application of funds for expenditure, that each department may receive its fair share of what is available.

So long as Wisconsin continues to be a home state there will be need for the constructive influence of our Wisconsin State Horticultural Society. Conditions may change to some extent, but human nature will hold to love for the beautiful in nature and nature helps to beautify home surroundings. As members, we pay our dues, elect our officers, and expect of them wonderful powers of foresight.

If we wish for different arrangements we should be helpful in our criticism—constructive instead of destructive. We should keep in touch with the members of our executive committee. They, acting with the board of managers, are the ones to direct the functions of our society. We, as members, are or should be the sustaining foundation of the society.

SOUTHWESTERN WISCONSIN LANDSCAPES

HURON H. SMITH, *Curator Milwaukee Public Museum*

Our problem in Wisconsin is no longer to sell the state scenery to the tourist. He is sold. If you have been traveling in Wisconsin this past year you know what hordes of tourists are flocking to

Wisconsin for their recreation and scenery. At every one of our many tourist camps you will see a varied lot of tourists—Packards and Pierce-Arrows with their de luxe load of two passengers, and Fords with the whole family, and then some! They come from nearly every state in the Union. Our problem becomes one of selling the state to ourselves. How can we induce our own people to see the wonderful scenery that we live in? Like the jackass, the thistles over the barb wire fence taste the sweetest, and distance lends enchantment.

In taking this collecting trip through southwestern Wisconsin, my assistant and I saw one of the prettiest parts of the state. The general consensus of opinion seems to be to go up north for your vacation, and to hunt a lake. Northern Wisconsin is beautiful, but we have seen campers on cut-over lands in dismal sand, and in places up north that are far surpassed by the coulees and ravines of southwestern Wisconsin. Many authors from the state have glorified it, and authors from outside, of national fame, have sung the praises of Wisconsin scenery. Anthony Trollope said that the scenery along the Mississippi river was the finest he had ever seen in the world, because it was so varied. In many places you may see mountains, forests, lakes and such things, but we soon tire of the same thing. The river bluffs, however, offer a constantly changing panorama that one never tires of watching. Wisconsin is reminiscent of many beauty spots elsewhere in the United States. How often I have awakened in the morning and peered out of my sleeping bag, half drowsily, thinking that I am in an Oregon or a North Georgia valley!

Of course, the real way to enjoy nature is afoot, but for our purposes this was too slow. We were out to get the plants of several of our counties that were not well represented in our herbarium. That meant not more than a week in a county, if we were to cover the counties we desired. So this time we took a motorcycle and side car. An auto would have done as well probably, but we surely could make time in getting to our base of supplies and far afield in morning and afternoon. However, we were not bound down to a fixed and firm schedule. We didn't fret about meals and bedtime. If we found something interesting, we simply got off and asked questions and photographed whatever we saw. You may know that we saw something, for we brought back over 700 negatives, of which I am showing you

some 66 in these lantern slides. The first view shows you the motorcycle, sidecar and the chauffeur, myself.

We started from Grand Avenue, Milwaukee, at the Public Museum, right on state Highway 19, whose other end is at the extreme west of the state in Prairie du Chien. We were first bound for Madison, and a short distance past Waterloo, we encountered a roadside pea viner. We heard no gasoline nor steam engine and found that they were running with electricity. The pea vines were pulled up whole and loaded on wagons, which were hauled to the viner. There by a series of flails and sifting screens, the peas were thrashed and the vines delivered to a rectangular vine stack at the rear. According to the number of loads delivered, later in the winter, the farmer comes back to take his share of the rich silage. Later we found that the perfume of such a stack rivaled the perfumes of Araby! We photographed the operation and then ran on to Madison, where we visited the botanical department of the University and Frederic Cranefield at his office of the Wisconsin State Horticultural Society.

We took Highway 12 out of Madison, through Middleton, Saukville, Prairie du Sac and the Baraboo bluffs to the town of Baraboo. Here we stayed a day to visit the flower farm of Wm. Toole. Often we had heard about Mr. Toole's work, but had never met him. We found him at Cozy Cottage, Pansy Heights, Route 2, Baraboo, Wisconsin, U. S. A. What is more, we found that he practices what he preaches. He is an ardent apostle of things Wisconsin for Wisconsin, when it comes to selecting plants to landscape our properties. He might well be called the Burbank of Wisconsin. All over his place you will see experiments he is carrying out to determine what can be produced from Wisconsin flora. We have photographed him here beside his white delphiniums or larkspurs. Perhaps a good many of you have never seen white larkspur but are more accustomed to the blue and lilac shades. We have all grown fond of the black-eyed Susan, always happy and dancing in the sun, but from this picture I made there, I doubt if many will recognize Susie, who has grown to be a big girl here. Patient seed selecting from the largest flowers, destroying the lesser growths, through a period of fifteen years has finally produced a blossom that is four times the size of the wild parent. The plant is a very vigorous one, too, so much larger than its wild congeners.

Many of you have wondered what was the name of that flaming orange flower that you saw in the sandy fields of the north. If it had only conformed to its blood brothers and had a milky sap, you would have immediately placed it with the milkweeds. But it is the exception and not the rule in the milkweeds, where it belongs, and is the Asclepias tuberosa, the Orange Butterfly weed or Pleurisy-root. It is a prime favorite with the Indians of our state, who esteem it as a medicine root under the name "kinokwe wautcetau" or "deceiving Indian." They use it for many diseases, but more especially for a cut or wound, to stop the flow of blood. But when you saw it in the fields, you only saw six or eight stalks in a clump and it was more or less lolling over the ground. Here, Mr. Toole has bred it to the point where the flower clusters are larger and finer and the number of stalks in the clump run past three hundred. Certainly no finer bit of color could grace a man's front yard. The fine thing about it is that it is a perennial.

W. A. Toole, his son, now runs the forty-acre flower farm and it is a riot of blossoms. He probably does more importing of foreign seed than any other grower in the state, perhaps too many for his financial good. Yet, his worth is appreciated by our state horticulturists, for they have just made him their state president, as they did his father before him.

Leaving Baraboo we proceeded towards our first objective, Black River Falls, over Highway 12. Our first stop was at the Dells, where we took the regulation three-hour trip through the Upper Dells in the Dells Boat Co. launch. After having seen much of this sort of scenery in many parts of the United States, we were agreeably surprised at the character of this scenery at the Dells. Surely no resident of Wisconsin should admit that he has not seen the Dells. The famous Watkins Glens of New York state is only an incomplete sample of what awaits one at Kilbourn. Highway 12 leads next through the Camp Douglas region, which is interesting from a geological as well as botanical standpoint. The high lime cliffs stand up in a ridge that resembles the great wall of China. On these are found an interesting lot of evergreens and plants. It is near Camp Douglas where we find the only dwarf sumach that occurs in the state. This typically southern sumach grows native to the Camp Douglas region. Leaving the town of Camp Douglas we happened into Hustler, Wis., for dinner and were directed to a private house. The family

had just returned from their Ford expedition into the sand regions of Juneau county, where they had picked several bushels of blueberries, and we were just in time for the fresh blueberry pie.

Leaving Hustler, we noticed several autos resting along the roadside with steaming radiators, and discovered there was a real hill. A motorcycle uses no water in its radiator, it merely radiates against one's calves. The hill scenery here was charming, constantly changing and unfolding a new panorama with every turn of the road. In the forests we saw many gray aspens and white birches bowed down from the previous winter's sleet storm. In such a calamity, the forest always pays. In the city we can prune the broken branches, and paint the wound with white lead before fungous spores have a chance to lodge and germinate. These tiny spores are always in the air. They are so infinitesimal that the unit of measure for them is a micron or mu, which is a thousandth part of a milimeter, or about a twenty-five thousandth part of an inch. They range from two of these divisions to forty, hence are appreciably smaller than a grain of dust. But the parent is a wound parasite only, few being able to affix themselves to their tree host unless a limb is broken and the sugary sap cambium layer is exposed. Lodging there, they send haustoria or rootlets into the body and start a greedy growth using the cell contents of the wood for nourishment, until in from 10 to 15 years they have amassed enough food material to fruit. Then a shelving fruit body emerges from the trunk, and the actual damage has been done. The tree is worthless.

Our next collecting grounds were Vernon county. We passed up La Crosse, because the Museum herbarium was so well represented from that region. Not that La Crosse is uninteresting, for it is highly so, and Highway 11, going from Highway 25 into Viroqua, is a scenic road if we have any at all in Wisconsin. One wends along through the hills, mostly in sight of the Mississippi, and the wonderful bluff scenery into La Crosse, which is no mean town. It is the best metropolis in western Wisconsin. Onalaska, on Highway 11, before arriving at La Crosse, is probably the best farming country in the state. But be prepared for hills, when taking Highway 11. With service and emergency brakes set, the motorcycle descended in graceful antelope leaps down some of the hills into Coon Valley. The Black River Falls ridge road also comes into Viroqua, and we had to take that a short distance

while they were concreting Highway 11 into town. Viroqua claims to be the highest town in the state, and it surely seems they can't be wrong when one meanders down the main street or rather up it to the band stand. Every direction from here is down, and one does well to stick to the ridges while motoring. Viroqua is a well-to-do city, much like Richland Center in this respect. They made more butter one week than any other county in the state. They have extensive plantings of tobacco, too, and were in the throes of organizing a pool while we were there, which subsequently netted them $45,000 more for their crop than they would otherwise have received. Vernon county is one of the wildest in the state. Only a native-born son like Raymond W. Spellum could ferret out some of the post roads. Spellum, who is in charge of the Nash garage there, is a hunter and naturalist of parts. He has shot and mounted deer, bear, bob-cats, panther, and many other small mammals in the county and has the only collection of some eighteen specimens of lizards collected there that we have seen. In fact, we didn't know that lizards were native to Wisconsin, until we saw his collection. On some of the ridges one finds pine forests that reminds one of the north woods. Peculiar outstanding rocks are to be seen in this country, where hard limestone remains along the highways. One of these is called the Monument Rock near Liberty Pole, and the other the Three Chimneys three miles northwest of town. The flora of Vernon county is particularly interesting in its trees and shrubs, many of which might be transplanted elsewhere in the state with advantage to the landscape, such as the bladdernut tree, the wahoo, the hackberry and others. Bittersweet is very plentiful in the county.

In leaving Vernon county we elected to stray off the main road Highway 27 on 101 to De Soto and try to run along the Mississippi towards Prairie du Chien. Just at the top of the hill leading into De Soto, we encountered the rural carrier, who looked at us with some interest, as being ones who would tackle the roads in that neighborhood. He said he had tried a Ford on his route, and discarded that for a motorcycle, and this in turn for the present rig, a two-wheeled cart and horse. This was practical except in winter, when he had to resort to horseback and saddle bags. We took the south road out of De Soto through Ferryville, and enjoyed some wonderful scenery. The road was rough and sandy, but we could see patches of yellow lotus in the sloughs,

and at one place we saw the brown Iris (Iris fulva) which had not been reported from Wisconsin. As our plant press was en route by train to Prairie du Chien we passed it up thinking it abundant from the great patches we saw. We never saw it again on the trip. Ferryville should be spelled Fairyville, for it was a most interesting little town. We were told that the road down to Lynxville and Prairie du Chien was much worse so we followed up Sugar Creek to the main ridge road, Number 27, and made some time into Eastman, where we stayed all night. Next day we took up our journey to historic Prairie du Chien.

As we came into town we found a big cottonwood tree right in the middle of the road, a disgraceful looking old specimen with the road turning out on both sides. When we made inquiry we found that it was the tree where Black Hawk hid two days and nights when the soldiers at Fort Crawford were looking for him. They did not catch him then. Two weeks after we had left the city, a windstorm blew it over. Prairie du Chien or the Prairie of the Dog as the French have it, is one of the most historic spots in Wisconsin. Early settlements here established the Astor fur trading post. The first frame house that was ever built in western Wisconsin is still in use in Prairie du Chien. It was really built in Pennsylvania, taken apart and put on a scow, whence it made a trip down the Ohio river, thence to the Mississippi and up the river to Prairie du Chien, where it was erected again, without the use of a nail. Here we find the oldest county court house in Wisconsin and the oldest fort and oldest fur trading post. Michael Brisbois built it with stone and so well that it is still in use as the Riverside Machine Shop. The proprietor, Ben Shaub, lives in the upstairs part. In early days the Indians from the far shores of Lake Superior paddled down to the Wisconsin shore, and portaged through our lakes and the Chippewa river to the Mississippi and then down to his front door with their furs. Brisbois did not have it all his own way, for a younger man, Jean Rolette, holding a permit from the Hudson Bay people, came in and won over the good will of the Indians. It was Brisbois's wish at his death that he be buried on the bluff of the Mississippi, where he might look down on his erstwhile enemy, who is buried in the French Military cemetery. So there he rests, on what is now called Brisbois bluff. Standing at his grave we get a wonderful view of the Prairie of the Dog. At the base of the bluff we see a green stretch of 695,000 tomato

plants and a gray patch of 35,000 cabbage plants that will furnish material later for the Prairie City canning factory. We can look across the prairie and river to McGregor, Iowa, the Pocket City, and are filled with a desire to go there.

Prairie du Chien is a city that lives in the past, hoping for a resumption of the good old days of the river packets, and when the Str. Capitol came up from St. Louis, with a load of 3,500 excursionists, practically the whole town was down to the docks to see it. In the olden days when Fort Crawford meant something, Zachary Taylor and Jeff Davis were visitors and the officers' quarters (now the general offices of the C., M. & St. P. Ry.) hummed with society doings. Then the river was alive with craft and later Mark Twain used to guide the steamboats up and down the river past Prairie du Chien. Now the chief traffic is across the river by ferry boats to McGregor. The bluffs on the Iowa side are abrupt and close to the river. Only enough space is left for the double tracks of the Milwaukee road. Down the railroad a couple of miles is one particularly high eminence called Pike's Peak. They are proposing a national monument for this park. From the peak one can enjoy the unobstructed view up and down the river, with curious islands and lakes, and can see the Wisconsin river join the Mississippi just at the foot of the Nelson Dewey State park. Down in the canyon a peculiarly colored sandstone cave is called the Pictured Rocks. Fearing over-press agenting, yet we went down to see it, and found it interesting indeed. We have never seen such varied colorings and such a bewildering set of silhouettes of hobgoblins. The sandstone is loose, though, and two parties lost their lives there the preceding summer when it fell on them.

The Prairie du Chien flora is southern in character, with many waifs from the south. The Partridge Pea or wild sensitive plant with its showy yellow flowers lined the river banks. So sensitive was it to the touch that the utmost speed must be made to get it into the plant press without partially wilting. False Indigo was another large shrub looking much like a sensitive plant. The prize bloom of the region was the Yellow Lotus. In Sunfish Slough were acres of it. Across on the Iowa side a resident was making much money from gathering and propagating it for the city department stores. They used the seed pods for winter bouquets. In Wisconsin, it is against the law to offer the flowers for sale or to gather the seed pods. This once important plant is rapidly disappear-

ing. It used to be plentiful around Lake Calumet in Chicago, but the markets claimed them before 1900. There is some misunderstanding about the status of lotus. Many attribute them to the Nile. Our lotus is Nelumbo lutea, while the oriental lotus is from India, Nelumbo speciosa. It was taken from India and planted along the Nile, but their native lily is a Nymphaea, and it is petals of the Nymphaea that furnish the floral decorations of King Tut's treasures. Only Wisconsin Indians used to make meal from the seeds and took the terminal tubers for their wild potato.

An interesting feature of the river life is the clamming or gathering of fresh water mussels from the river bed. Quite a summer colony of clammers gather these and sell them to the button blank factory at Prairie du Chien.

We stayed ten days at Prairie du Chien because of the interest in plants, and saw Kentucky Coffee Trees and Honey Locust of considerable size. Our next schedule was Grant county, so we left Prairie du Chien on 19 and took Highway 65 through Patch Grove and Bloomington into Lancaster. Lancaster is the county seat, and on their courthouse square is quite a collection of statues. One is of Nelson Dewey, our first governor of Wisconsin, in 1836. Later, while traveling out of our headquarters at Platteville, we discovered the first Wisconsin Capitol near Belmont in Lafayette county. The southern part of Grant county is also a historic place and as one goes through the villages of British Hollow and Dutch Hollow to Potosi one could easily imagine he was in a different country from the United States in some of these quaint towns. Near Potosi we found a wild Hibiscus militaris, that for lack of a common name we dubbed the Wisconsin Rose of Sharon. It is a semi-shrub with a large pink, mallow-like flower that would make an ornament to anybody's lawn. Why do we coddle a bunch of foreign shrubs and bring in their attendant insect and fungous pests, when such fine material for landscaping our lawns is to be had for the digging? There is no question as to whether such plants as this will succeed, for they are succeeding without asking any odds of our climate and are native to Wisconsin.

Platteville is an historic place, with its age-old mining school and its Normal school, which is the oldest in the state. In the early days of Wisconsin many were attracted to the place because of its mining possibilities. Now it is a city which has shrunk in

population and yet is on the upward trend. Grant county is rich agriculturally and there is no doubt that if the truth were known, it would prove to have more different species of plants than any other county in the state. We were directed to a pine knob near Stitzer, where we found some white pine and a number of northern species. This only reiterated the old truth that plant life is a matter of altitude and latitude. Given elevation, one can name the plant life, or vice versa, naming the species will determine the elevation in any given latitude.

South of Platteville, on Blockhouse Creek, we came upon a fine virgin hardwood forest of 800 acres, that belonged to an estate and had never been divided or logged. Along the banks of the creek we found Tuffa Falls. "Found" is the right word, for it is very insignificant in the amount of water that passes over the brink of the falls, and yet it is one of the most beautiful that we have ever seen. It compares favorably with Moss-Brae Falls along the Southern Pacific on Mount Shasta. There is a short path to the falls from the Normal grounds, and doubtless many a youth has popped the question in this idyllic spot. A small spring comes over a ledge of rock to join Blockhouse Creek, and in trickling down the bluff has enriched and garnished the rock with liverworts, mosses, ferns, Selaginella, ground hemlock, lichens, and flowers. The rare walking fern has taken up its abode and peregrinates experimentally over the cliff. It is hard to get there with an automobile but well worth the trip to see.

Our last collecting ground for the season was Prairie du Sac. Ed Ochsner, the bee man, had invited us there, where we could browse over three counties with his valued assistance. So we set sail from Platteville after dinner, over Highways 80, 19, 28, and 60 into Prairie du Sac by evening. Some of the hills were so precipitous on Highway 28 that we broke both front springs in descending, so that we had to proceed gingerly the last of the journey from Spring Green into Prairie du Sac. At Prairie du Sac we were in the corner of Sauk county, just across the river from Columbia county and only a short distance from the northwestern end of Dane county. Of course, the greatest interest at Prairie du Sac is the big dam where more hydro-electric power is generated than at any other point in the state. We spent our evenings there, exploring the caves under the dam to see the delicate lacery of the fungous growths. These wing dams are a fifth of a mile long. The Wisconsin river is dammed up until there

is a difference of 35 feet from where it enters the power plant and is forced to do its work before it is let out below. The fishing is always fine. Both in Lake Wisconsin, which is really the water backed up by the dam, and in the river below the fishing is good. Channel catfish up to 70 pounds are taken. The fishing varies in species throughout the season, seeming to run in schools of one or two kinds of fish at any one period.

A short distance west of Prairie du Sac is a sand prairie that has not been in cultivation for fifty years, and here one may see the original flora. At points in the county near the Baraboo bluffs are rocky patches where the prickly pear cactus is found with its accompanying rattlesnakes. The Baraboo bluffs are interesting wild ranges, where one may see the deer paths as well marked as cow paths. Deer have been protected for many years in Sauk county and have become a pest to the farmers of that region. Many a corn crop has been harvested by the deer. In Baxter's Hollow, which runs north into the Baraboo bluffs, is a veritable paradise of wild plants for the collector. The little stream that flows down through the hollow is well stocked with trout and we could see schools of big fellows idly sunning themselves in the larger pools. In this same hollow, in the rocks, are many rattlesnake dens.

Near Crystal Lake, in the edge of Dane county, we discovered a little mud lake filled with yellow lotus. Our best single day's collecting in this region was on Ferry Bluffs or Honey Creek flats as they are called. There, on the different exposures of the bluff and in the flats, we collected 235 species in one day, and of course five duplicates of each, or a total of 1,510 specimens. It was from these bluffs and from Gibraltar Rock in Columbia county that the Museum obtained the series of duck hawks for a large group in the museum. The natives in southwestern Wisconsin call the duck hawks the stone falcon, and described the way the bird will drop like a stone to attack a robin, blue jay or pigeon, striking with talons into its heart, then backing off and watching the bird tumble down. Just before it reaches the ground the duck hawk again swoops down and catches the dead bird to carry it up to the cliffs and devour it.

One of our last trips in the region was to the summit of Gibraltar Rock to collect and to view the surrounding country. At the base of the rock is a small lake that is gradually being transformed into land by the vegetation, though there is still

open water all around the lake. On the banks we saw acres of horse mint or wild bergamot (Monarda punctata). The steep slopes are covered with vegetation and there are a few rather uncommon things among them. From the top one gets a good view of the Wisconsin river, called at this point Lake Wisconsin, which stretches for miles down to the dam at Prairie du Sac. Of course a good deal of farm land was covered when the dam was erected, and the forests that were covered are now leafless. At the summit there are a few old red cedar trees that cling to the rocks and give mute testimony of the weathering of the winter storms. One old specimen was quite decorative, more so, to our notion, than the Witch's Tree that stands on a tideblown rock in the cypress grove at Monterey, on the peninsula, in California.

After having seen the United States pretty thoroughly, we come back to Wisconsin, and no longer wonder why so many tourists from every state in the union, come here for their vacation. The only wonder is that one does not see an overpowering number of Wiscosin licenses at the many camping grounds.

WISCONSIN STATE HORTICULTURAL SOCIETY SUMMER MEETING

La Crosse, August 15 and 16, 1923

The summer meeting of the Wisconsin State Horticultural Society was held in Myrick Park, La Crosse, on Wednesday, August 15 and Thursday, August 16, 1923. The following program was presented and carried out without a missing number:

Wednesday Forenoon, August 15, 1923, 9:00 O'clock

Welcome to La Crosse.....*Mayor J. J. Verchota*

Progress in Control of Fruit Diseases.....*Dr. A. J. Riker*
U. S. Dept. of Agric.

Field Work in Horticulture, 1923.....*C L. Kuehner*
Dept. of Hort. Univ. of Wis.

Spray Rings in La Crosse County.....*W. E. Spreiter*
County Agr. Agent

Question Box

Wedneday Afternoon, 2:00 O'clock

Decoration of Rural Home Grounds.....*Prof. F. A. Aust*
Madison

Flowers at Home.....*Carl Schafer*
La Crosse

Soils of La Crosse County.....*H. W. Ullsperger*
Sturgeon Bay

Raspberries and Strawberries Up to Date.....*W. H. Hanchett*
Sparta

Question Box

The discussions following the papers were of unusual interest. On the second day, August 16th, following our custom, the members spent the day in an automobile trip, visiting orchards and gardens, private and commercial.

DATE DUE

Book is due on the last date below. A fine of ONE CENT will be charged for each day the book is kept after that date.

14 JAN

Lower Studs