ALASKA NAFEX NEWSLETTER

A PUBLICATION OF THE ALASKA CHAPTER. NORTH AMERICAN FRUIT EXPLORERS (NAFEX)

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MEETING DATES

DEC. No meeting. HAPPY HOLIDAYS!

FRUIT SURVIVAL IN TOK

Our 'Kiska' raspberries did all right this past summer, but they were planted 18 May, 1988 and so were small and flexible enough that they were snow-covered. The 'Latham' raspberries did not make it through last winter. They survived, but that is all. There was one small cane that had a couple of berries, but we eliminated them. Most of our other raspberries have been brought in from the wild and we are selecting the best and removing the others. We were satisfied with the size and flavor of the 'Kiska'. This past summer they were tall and strong. Again, our snow came early and we have a good ground cover, so we shall see how they do.

We had the warmest, sunniest summer this past year in the seven we have been here. The fall also was exceptionally good. Our Gallica rose and Austrian Copper both came though looking very good when the mulch came off, but the new growth withered and died. We wondered if maybe the rootstock had not survived. The Hansa rugosa continues to grow, and the old roses we brought from Michigan thrive.

We planted chokecherries this year. They do grow here, although I don't know anything about their fruit productivity. We also planted Siberian crabapples, and several made good growth. We have one 'Ranetka' that grew well. They came in May along with about a foot of snow that stayed nearly a week. So we shall see come spring how well they do.

-Tom and Lena Clark

A GOOD BOOK IF YOU CAN GET IT

One of the most well-worn books in my library is one by R.J. Garner called The Grafter's

Handbook printed by Faber and Faber, London in 1979. It was originally published in 1947 and has been a standard reference for grafting by both professionals and amateurs, alike. It includes information on grafting techniques, compatibility, collection and treatment of rootstocks and scionwood, tools and accessories, and growing grafted trees in nursieries.

For yeare, this book has been out of print, and the only copies were second-hand from book stores specializing in old and rare books. However, I just received a notice that a book called The Grafter's Handbook has been republished by Cassell, London in association with the Royal Horticultural Society. I don't know if this book is the same as my worn copy, but if it is, it should be in the library of every serious grafter in Alaska. It is definitely worth a trip to your local bookstore to find out.

Speaking of old and rare books. One of the best sources of out-of-print horticultural books is Pomona Book Exchange Highway 52, Rockton P.O., Ontario LOR IXO Canada. They are not cheap, but their quality and selection is excellent. They have lots of very unusual books on fruit culture. Their catalog is free.

-P. Holloway

RESEARCH ON HARDINESS OF APPLES

Dr. Del Ketchie, a horticulturist at the Washington State University Tree Fruit Research and Extension Center in Wenatchee, Washington gave a seminar here on "Seasonal variations of cold hardiness in Malus woody tissues". According to Del, seasonal variation in cold resistance is related to air temperature, daylength and the growth stage of the tree.

Freezing resistance is studied by determining at what temperature the water inside the cell freezes. When this water freezes, it ruptures cell membranes and kills the cell. The temperature at which this occurs differs with different tissues (flower buds, xylem, pith, etc).

When water freezes, it gives off a small burst of heat which is called the heat of fusion. When tissues are frozen, this small burst of heat, also called an exotherm, is measurable. Thus, researchers can tell what temperature will kill a particular tissue.

When temperatures around a plant are slowly lowered, several exotherms occur. The first one occurs at -5 to -7 C (19-23 F). At this temperature water occurring outside the cell walls freezes in the pith tissue at the heart of the trunk or branches. This is called the P-exotherm. No cells die when

this water freezes. At -25 to -30 C (13 to 22 F) cells located between the outer ring of xylem (water conducting cells just beneath the bark) and pith freeze, and this is called the H-exotherm. Freezing in these cells is directly related to plant hardiness.

Del Ketchie worked with 'Golden Delicious' apples and found that the H-exotherm occurred at -31 C (-23 F) when plants were fully dormant in winter. He found that exposure to -25 C (-13 F) killed some branches, and by -29 C (-21 F) the trees were mostly dead. The pith in the center of the tree froze first. The cells between xylem and pith froze next.

Apple trees go through three stages of acclimation. In the first, which always occurs after June 21, terminal buds are formed in response to shorter daylengths. At this stage, -4 C (24 F) will kill the leaves. Next year's buds are formed at this time and will begin to grow if the trees are defoliated.

Vegetative maturity is the second stage of acclimation (about Aug 20- Sept 10 in Washington). It starts when vegetative growth ceases. Defoliation from low temperatures between July 6 and Sept 10 will cause some new buds to grow, but after Sept 10, no new growth will occur. During the second stage, cold resistance increases from the date of vegetative maturity onward regardless of the outdoor temperature.

The third stage of acclimation begins with the first temperatures of -2 to -3 C (26 - 28 F). The more subfreezing temperatures that occur then, the hardier the tissue gets. Hardiness begins at the leaves and branch tips and spreads to the trunk. The plants are dormant at this time (around Nov 10), and no amount of warm temperatures will make the tree grow or de-acclimate (lose hardiness). This stage of dormancy is called rest, and plants need a certain number of hours of chilling (above freezing) temperatures in order to break down internal chemical growth inhibitors. Rest is said to be fulfilled when plants have received the appropriate number of hours of chilling, and, given warmer temperatures, they will grow again.

Apple trees typically fulfill their rest requirements by early to mid January. After this point, they don't grow because of cold temperatures, not because of some internal growth inhibitor. Plants can de-acclimate or lose their hardiness at this time. The warmer the temperature, the faster a tree de-acclimates, and unfortunately, it cannot re-acclimate with renewed cold temperatures as fast as it de-acclimates. That is why apple

trees are very sensitive to hard freezes in spring. The closer the tree gets to budbreak, the less hardy it becomes.

Del has done some work with 'Antanovka' and said that it typically sets its terminal buds 3 weeks before 'Golden Delicious'. 'Gala', which ripens somewhat earlier than 'Golden Delicious' is nevertheless less winter-hardy, which goes to show that the statement "the earlier the fruit ripens, the hardier the apple" really isn't true. 'Fuji', a Japanese apple which ripens later than 'Golden Delicious', is actually hardier. 'Gala' evidently has erratic cold hardiness; this may explain why some 'Gala' trees died in Anchorage and Hope this past winter. -R. Purvis in Pullman

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HONEYBEES AND APPLES

Did you know that bees are attracted to flowers and recognize them by their color, shape and odor? When they are working flowers of one color only, they become conditioned to that color and do not visit flowers of a different color. Researchers at Washington State University showed that honey bees showed a strong fidelity to foraging either white or pink/red flowers, thus some ornamental crabapples with dark pink or red blossoms do not make good pollinizers of apples with white/light pink blooms. Bumblebees and other types of bees apparently disregard color differences and will pollinate any color apple or crabapple flower.

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1990 DUES $7.00 Payable by check or cash to Erik Simpson
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w _____

STOCKING STUFFERS

NEW Fruits & Berries of the Pacific Northwest

D. C. Flaherty and S.E. Harvey 1988

A large format book with luscious color pictures of fruit as its main feature. The authors have many interesting profiles of the history of the fruit industry in the region and some of the growers who are in it today. There are adequate sections on planting and pruning, a very limited section on pests and diseases, and fairly good variety descriptions of the most widely available varieties of many kinds of fruit and berries. In addition to the lavish color plates of the fruit varieties, there are some beautiful pictures of the fruit growing valleys and orchards of the region. This book will appeal to professional orchardists looking for variety ideas and fruit hobbyists as well. 101 pages, softcover. *-ZBS*

ANP001 $24.95

Strawberries - Cultivars to Marketing

Edited by Norman F. Childers 1981

Proceedings with additional information from the 1980 National Strawberry Conference, St. Louis, Missouri. This is a complete book on modern strawberry production, well illustrated, with detailed literature citations. 550 pages, softcover.

HPU003 $25.00

Strawberry Deficiency Symptoms: A Visual and Plant Analysis Guide to Fertilization

Ulrich, Mostafa, Allen 1980

Discussion of nutrient deficiency symptoms are followed by recommended corrective measures and accompanied by numerous color photos of deficiency symptoms in leaves, flowers, roots, and berries. A very useful reference for the commercial grower. 58 pages, softcover.

ANR034 $8.00

Blueberry Culture

Editors P. Eck & N. F. Childers 1966

All the details of the botany, cultivars, growing, pruning, marketing, and processing of blueberries. This is not a new work but it is quite complete and is edited by recognized experts. There are ample photos, tables, and charts. 380 pages, hardcover

HPU005 $30.00

NEW Blueberry Science

Paul Eck 1988

This companion volume to *Blueberry Culture*, synthesizes and interprets the major research advances of the last two decades. 284 pages, hardcover.

RUT003 $60.00

Kiwifruit Handbook

D.M. Johnson, C.A. Hanson and Paul H. Thomson 1988

The three authors of this practical book have a lot of experience with growing kiwifruit and they convey it clearly in this handbook. Although they do not go into the economics of kiwi production, virtually everything about the horticultural aspects of the crop is here, including physical requirements, land preparation, trellising and training, propagation, pests and diseases. Simple style and layout make it a worthwhile reference. 106 pages, softcover.

BON003 $15.00

Actinidia Enthusiasts Newsletter #5

Michael Pilarski 1988

This once a year publication is the most comprehensive English-language compilation of information on Actinidia vines (kiwifruit and hardy kiwi fruit). 115 pages, softcover.

FRI002 $10.00

The Handbook of Soft Fruit Growing

D. Turner and K. Muir 1985

Two commercial growers have produced a beautifully illustrated guide for small farmers or serious home gardeners. It contains clear, concise, practical information in a well organized format. Culture of cane fruit, strawberries, blueberries, cranberries and kiwifruit is covered, from field layout and soil preparation, to tips on picking. The merits of both standard and newly released varieties, many of European origin, are clearly defined. Margin notes make information easy to locate, while large color illustrations of disease symptoms and well designed calendars of likely pest problems with pesticide response options for each crop are big bonuses. 181 pages, softcover. *-CL*

ISB008 $10.95

Fruit Tree Propagation

Propagation of Temperate-Zone Fruit Plants

H. Hartmann & J. Beutel 1981

A really informative, no-nonsense, large format pamphlet from the University of California designed for commercial fruit growers and students of plant propagation. The techniques of budding and grafting are covered as well as is possible in a publication, and there is good information about rootstocks, seed propagation, cuttings, and layering. The ample illustrations and charts are very clear and there are some supplementary references. Highly recommended. 63 pages, softcover.

ANR031 $5.25

Rootstocks for Fruit Crops

Edited by Roy C. Rom & Robert F. Carlson 1987

This scientific text brings together the latest information on root system function, propagation procedures used for rootstocks and specific stock-scion compatibility interactions. The 14 essays cover every type of tree fruit crop and some nuts as well. Extensive references and plenty of tables and charts round out this reference for those involved in tree propagation. 494 pages, hardcover.

WIL132 $57.50

Western Fruit, Berries and Nuts:

How To Select, Grow and Enjoy

L. Walheim and R. L. Stebbins 1981

This beautifully illustrated guide discusses the cultivation and management of both major and minor crops grown in the West. Its greatest asset is the extensive presentation of cultivar characteristics for each crop, in which clear and easily utilized tables compare growing zones, maturity dates, and disease resistance. Tables comparing climatic conditions for western locations and a detailed growing zone map aid in adapting information to the user's specific needs. 192 pages, softcover.

HPB002 $12.95

Additional Fruit Production Titles:

Backyard Fruits & Berries, Bilderback, 1984, 300 pp., hardcover, ROD047 $17.95

California Orange Box Labels: An Illustrated History, McClelland, 1985, 133 pp., hardcover HIL001 $37.50

Cane Fruit, 1982, 89pp., soft, GRO013 $7.50

History of the Strawberry, Wilhelm, 1974, 298pp., softcover, ANR015 $10.00

Fruit box Labels: A Collector's Guide, McClelland, 1983, 192 pp., softcover, HIL002 $17.95

Compendium of Strawberry Disease,Maas, 1984,138pp., softcover APY013 $26.00