

AUGUST 1994

VOL. 26, No. 4 - \$3.00

# FRUIT GARDENER

California Rare Fruit Growers



**Passionfruit: Edible vs. Eatable**

**The Fruits of Borneo**

**Chestnuts Past, Present and Future**



## This Is a Sorb, Best When Bletted

Mark Albert

**A**fter tasting sorb fruits brought by C.T. (Todd) Kennedy and Pat Schafer to our local permaculture workshops in the late fall of 1990 and 1991, I wanted to start some trees. The fruits came from "Luther's" trees. Since most of us in the Redwood Empire chapter live so close to Santa Rosa and have combed his properties for varieties, we think of Luther Burbank as a deceased and venerable member of the chapter and a good friend. So we just refer to him as Luther, and we feel like he's smiling on our efforts to carry on the work that enables people to taste the wonderful fruits of the earth.

So on Dec. 12, 1991, I met Todd at the remaining two acres of Luther's Gold Ridge Farm in Sebastopol to collect scions from the sorb trees in what remains of his now sacred *Sorbus domestica* grove. The western portion of the grove was impressively littered with beautiful firm yellow one-and-a-quarter-inch pears, which were dropping every minute from the mid-season tree row. A natural utterance of reverence was evoked when we looked up and realized that less than 20% of the fruit had fallen from these bountiful trees.

In another row to the west, tens of thousands of withered brown fruit had already decayed into the grass from the early-season trees. The few late-season trees farther west were heavily laden with hundreds of clus-

ters of red-blushed greenish fruit with a long way to go before ripe. No wonder the early peoples of Europe loved this tree. One cannot but feel blessed by such abundance.

As Todd and I surveyed the scene, we realized we had arrived to pick scions just in time. At least three trees were lying on the ground, having recently been cut down by the landscape crew to make way for planting other more important Burbank cultivars. When we learned that these trees were not propagated before being cut, and when Todd told me he knew of no other *S. domestica* planting in the country, I felt compelled to compensate for this sacrilege by spending the day salvaging the germplasm. I photographed, mapped, and picked fruit and scions until darkness forced me to pack up.

### Identification Difficult

It was quite a chore to decipher which brush piles and trunks positively belonged to which stumps and then find good scions. Several of the trees had obviously been down for a week, as the good terminal shoots were all shriveling but not dead. I collected these shriveled scions for rehydration, since I have revived other fruit wood this way by soaking in refrigerated water. I also picked the trunk scions which were not shrivelling but which were very short with lots of knuckles. I labeled these separately as they were positively identifiable to a cut stump. The terminal buds were all very sticky, which I have not seen in any other fruit wood. I wondered if the other *Sorbus* species have this unique characteristic. I confess I had some doubts about just what I was trying to accomplish by saving these trees whose fruit most people wouldn't even call edible. But because of such a "last chance" opportunity, it seemed like the right thing to do. I just kept saying to myself, "This is for you, Luther!"

I collected scions from 11 trees, approximately half of the *Sorbus* trees still standing. I sent the six best ones to Hector Black at Hidden Springs Nursery in Tennessee, and to Kim Hummer at the National Germplasm Repository in Corvallis, hoping they might have compatible rootstock to get the grafts to take.

There were about six varieties of *S. domestica* which either had some kind of distinguishable characteristic, or were better quality according to Todd's memory. Todd has been tasting these sorbs for several years, so he knew which ones he preferred. I have listed the varieties from A to F approximately by ripening season, except for the pear-shaped Sorbus-F, which may no longer exist. Descriptions follow:

**Sorbus-A** is early season (September 10) and best quality (3.2 x 3.2cm, 20-26g). More pear-shaped and unrussetted than the others, except for Sorbus-F, with a very much smaller, tighter apical button. Red-streaked on greenish yellow. Tree short and spreading, perhaps a grafted clone from Europe. The tree is near the northwest corner of the Burbank cottage.

**Sorbus-B** was early season, maybe a little earlier and perhaps as good as Sorbus-A (according to Todd's memory), the largest tree by far with a trunk over 2 feet. It must have pounded the Burbank cottage with tens of thousands of fruits; no wonder they cut it down! (Dried fruits 3.2 x 2.3cm wide; fresh fruits would be probably larger and pear-shaped.) Vigorous Sorbus-B sprouts have risen from below ground since the tree was cut down, so we are propagating these. This stump is on a mound just west of the cottage, and will probably be removed for landscaping.

**Sorbus-C** is mid-season, good quality, yellow, largest fruit, larger and better looking than Sorbus-D (3.5 x 3.9cm wide, apical button 8 mm diam., 30-32g).

**Sorbus-D** is mid-season, better quality but a little smaller and more russetted and greener color than Sorbus-C (3.3 x 3.4cm wide, apical button 6mm diam., 23-27g.). May be grafted at 30" or may be an old injury.

**Sorbus-E** is late-season, of unknown quality, maybe a keeper or maybe won't ripen this far north. Beautiful red-blushed green fruit, smaller than Sorbus-C (3.1 x

### Fruitful Mountain Ash

*Sorbopyrus*, a mountain ash (*Sorbus*) and pear (*Pyrus*) cross, is one of more than 60 different kinds of mountain ash from around the world that ARS curator Kim E. Hummer and her staff preserve at the USDA-ARS National Clonal Germplasm Repository [33447 Peoria Road, Corvallis, OR 97333; phone (503) 750-8712, fax (503) 750-8717].

The tree bears a delicious fruit about the size of a small peach. Its speckled, pale-yellow skin is tinged with red; inside, the yellow flesh has the "sweet, mild taste of a pear," says Hummer.

The Corvallis repository has been the source of this unique hybrid for breeders, nurseries and amateur fruit growers since 1986.

—From *Agricultural Research*,  
Dec. 1993, p. 16

3.0cm wide, apical button 7-8mm diam., 17-22g). The tree is on the western edge of the grove in the periwinkle.

**Sorbus-F** was probably mid-season, smallish size, very pretty, red cheek on yellow smooth skin, and the most pear-shaped. The apical button smaller than all except **Sorbus-A** (3.0 x 2.8cm wide, 17-19g). Quality unknown. The tree was one foot south of C, now destroyed, no suckers.

### Present State and Evaluation

The status of these varieties as of March 1994 is this: **Sorbus-A**, C, D and E are alive and well at Gold Ridge. **Sorbus-B**, which was a huge tree with a trunk over 2 feet in diameter, was cut down and has vigorous crown sprouts from below ground. This B-sprout I have successfully grafted, but Todd thought the source tree had been a grafted one because of its relatively high quality and earliness, so the B-sprout may not be the original. **Sorbus-F** has been lost unless Kim Hummer or Hector Black grafted it successfully. I'll be writing them to see if they caught it. **Sorbus-F** was the only really pear-shaped fruit that I saw, although B may also be pear-shaped.

What does the sorb taste like? Well, don't try it until it rots! Like the persimmon it has to blet to lose its unpleasant astringency. Generally, I think that the sorb is to the pear what the medlar is to the apple. Medlar tastes to me like concentrated apple, actually like cooked-down apple butter. Well, sorb tastes like very concentrated cooked-down pear, with a strong vodka flavor thrown in. The overall taste is surprisingly strong, so strong it attacks the taste sense. It does turn some people off at first. They make a face and say it's too much!

What I find interesting is that the alcoholic "vodka" flavor, which develops only after bletting, is prominent in the mouth, but there's no sensation in the throat which real alcohol would create. Apparently this flavor is not the result of a yeast fermentation, because the skin is perfectly intact even after the fruit turns brown and soft. So it must be an enzymatic fermentation. Scientists call it autolysis, but the peasants of Europe called it bletting. I believe it is basically the same type of ripening as in persimmons, but persimmons keep their beau-

tiful color in the process. Sometimes sorbs will blet without much discoloration, but usually if they are not brown they are astringent like an unripe persimmon.

Sorbs don't ripen on the tree, but fall off when hard ripe and fully colored. Some of them may begin to half blet on the tree, perhaps due to damage by bird, wind or sun. They are very astringent at this stage. Lying on the ground, they blet to ripeness. When the sorb is really ripe enough to lose all its astringency, the skin loses all its yellow or green color and becomes homogeneously reddish-brown. This rotten coloration puts everyone off at first. Now, I wouldn't call a 1¼-inch pear mere "bird food," so I think it is really the rotten-brown color of the fully ripe fruit that has relegated it to the food-for-the-birds category for all but a few people.

With this in mind, it made sense when Todd told me that today in Italy it is only eaten by two kinds of people, the really old-fashioned country peasants and the wealthy urban gourmets. The peasants pick them fresh off the ground under the tree, let them sit in a shaded outdoor area until bletted brown and soft, and consume them the easy way: Close your eyes, peck a hole in the skin, and suck. The wealthy urbanites, on the other hand, buy the novelty fruit for very high prices at specialty greengrocers. After the fruit is fully bletted brown and soft, they extract the pulp through a strainer to separate out the skin and seeds, and the sporadic large grit cells (as in some pears). Then they fold it into cream-based desserts like whipping cream or ice cream, and other such rich deserts to enjoy an exquisite pear-liqueur-flavored dessert. Of course, the peasants live long and healthily, while the rich folks have heart attacks in their fifties.

### Minor Fruits Good and Bad

The sorb is a "minor fruit," of course. Now, I've tried some of the other so-called minor fruits. Many of them are not very good tasting, not even as good as a manzanita berry. Perhaps they just need a few hundred years more selection. A few are quite good. Juneberry (*Amelanchier alnifolia*) stands out as one the best that have fruited for me. Anyway, I put the sorb right

up there with the best minor fruit I've tasted. It's certainly abundant. It makes a nice tall single-leader tree naturally, without suckers. It seems very tough and completely disease-free. It may be the most southern of the *Sorbus* species, so it appears that ripening time is a limiting factor. It has a very cute little miniature pear-like fruit, with a red blush, too. I have the distinct feeling that it is a highly developed fruit in its own unique way and has been selected over thousands of years by peasants. I guess you can tell I like it, and I think it has been overlooked.

I should mention here that the trees are messy, maybe even dangerous, on pavement where the hard fruit may pose an obstacle course. This species of *Sorbus* does not have very fine-cut leaves or the "fall color" (leaves that turn red) of the mountain-ash side of the *Sorbus* genus. The leaves do look nice until the fruit drops, but they become dull yellow and even brown at season's end. So this is not a tree with urban landscape values. Dare I say it is a peasant tree?

### Propagation Considerations

The sorb probably comes true to seed. I am guessing this by observing how Luther laid out the rows in order of ripening dates, east to west. He apparently already knew his material well enough to plant the rows this way. Some of the trees in a row are planted less than a foot apart, which is how most of us plant seedlings. No graft unions are apparent on any of the trees, except maybe one. The pear-shaped F was only a foot away from the apple-shaped C in the mid-season row. So it appears that Luther was in the middle of a planned *Sorbus* project, and may have been looking for the different characteristics to manifest themselves. The C, D and E varieties especially look like homogeneous seedling rows, so that is why I am guessing *Sorbus domestica* is quite true to seed, which may prove to be the best solution to propagation.

Grafting these Burbank sorb trees has turned out to be a real chore because of rootstock incompatibility. The seeds are easy to start by planting fresh seed direct from the fruit, which works well for me for most deciduous tree seed. I did want to

save Burbank's work, so I felt I had to collect scions from his clones. This may have been a mistake, as I now realize I did not start seedlings of the pear-shaped F variety which now may be lost. I wish I could see things more clearly right from the beginning of a project. I didn't have any *Sorbus* stock to graft that first year, so all of my grafts failed, whether on *Pyrus communis*, Red Haw (which works fine for medlars), or regular quince roots.

Most of the grafts took, but grew only an inch or two, and finally died the next winter. I'd call that incompatibility. The *S. domestica* seedlings in pots have scorched from both too strong a potting mix and also direct 100-degree summer afternoon sun. I've had similar problems with nut-tree seedlings. All my sorb seedlings have recovered from these setbacks, so it is an inherently tough tree.

I've finally succeeded in grafting the most important Burbank trees. My 2-year-old seedlings, grown from seed from these very trees, were grafted March 1994. All five of my named *Sorbus*, A through E, are strong takes. I also have 10 seedlings of *Sorbus acuparia* from a recent Bear Creek Nursery bareroot shipment that I am grafting this year to test for rootstock compatibility, as this would be the quickest way to obtain trees.

My attempts at photographing the fruit have also been an ordeal, because of my own incompetence. I am sorry the picture on the back cover is not better, but at least it gives a notion of what the fruit is like.

We will be supplying the Seed Bank with seed from Luther Burbank's grove using the above descriptors, and eventually scions will be distributed, probably through our annual scion exchanges. If anyone has more information about this interesting but obscure fruit, please write us at 950 Lake Mendocino Dr., Ukiah, CA 95482. Let us all carry on Luther's work to some small degree. □

*"Trees and Bees"* Mark Albert returned to California in the mid-70s from a four-year stint abroad, three in India, and managed a wholesale propagation nursery in Santa Barbara until he moved to Ukiah in 1980. In his northern Garden of Eden he has been testing 500 varieties of gourmet fruits and nuts. He writes locally on permaculture and teaches grafting as a public service.

## Edible Passifloras: The Deep-Freeze Test

Rick McCain

In the 15 years I have been growing Passifloras at my present location in Watsonville, Calif., I have had no serious frosts — except for the killer freezes of February 1989 and December 1990. The following table shows the effects of the 1990 Christmas freeze on edible Passifloras at my farm, one mile inland from the Pacific Ocean.

OUTSIDE	GREENHOUSE	SPECIES
Outside = Plant growing outside. Outside low temperatures included one night at 21°F, the next night at 22°F, and two following weeks of nighttime lows in the mid-twenties.		
Greenhouse = Plant growing in unheated greenhouse that had holes in roof and walls. Greenhouse low temperatures included one night at 28°F, the next night at 29°F, and many nights below 32°F during the following two weeks.		
OK = Plant top growth survived, with minimal or no damage.		
Root = Plant killed to ground, but re-sprouted from roots during 1991.		
Dead = Plant killed completely.		
— = Plant not being grown in that location.		
OK	—	<i>actinia</i>
—	1 OK/1 Dead	<i>alata</i> (2 cultivars)
OK	—	<i>alata</i> 'Ruby Glow'
—	OK	<i>amethystina</i>
Dead	OK	<i>ampullacea</i> (several cultivars)
Dead	OK	<i>antioquiensis</i>
—	OK	<i>arida</i> var. <i>pentaschista</i>
OK	—	<i>caerulea</i> (3 cultivars)
—	OK	<i>cincinnata</i> (3 cultivars)
—	Dead	<i>coccinea</i> (2 cultivars)
Dead	OK	<i>cumbalensis</i> (3 cultivars)
OK	OK	<i>edulis</i> (several cultivars)
Dead	OK	<i>edulis</i> f. <i>flavicarpa</i> (several cultivars)
OK	—	<i>exoniensis</i>
Dead	Dead	<i>foetida</i>
OK	OK	<i>incarnata</i> (3 cultivars)
OK	—	" <i>jamesonii</i> " (the Calif. hybrid)
—	OK	<i>karwinskii</i>
—	Dead	<i>laurifolia</i>
Dead	OK	<i>ligularis</i> (5 cultivars)
—	1 OK/1 Dead	<i>magnifica</i> (2 cultivars)
—	Dead	<i>maliformis</i>
OK	—	<i>manicata</i> (2 cultivars)
1 OK/1 Dead	—	<i>matthewsii</i>
1 OK/1 Dead	OK	<i>membranacea</i> (2 cultivars)
—	OK	<i>menispermifolia</i>
—	2 OK/1 Dead	<i>mixta</i>
OK	OK	<i>mollissima</i> (several cultivars)
Dead	—	<i>mollissima</i> (tripartita type)
OK	OK	<i>morifolia</i>
—	OK	<i>pallens</i>
—	OK	<i>parritae</i>

(continued on page 21)