January was one of the coldest in the past 50 years in the Finger Lakes. On January 9-10, low temperatures reached –10 to –18 degrees F in most of the Finger Lakes, with perhaps an average of –11 to –12. Unlike most cold events, it appears favored locations (slopes near lakes) didn’t have much effect on the low temperatures – vineyards in the Hector/Valois area, and across the lake at Dresden had –10°F. This was followed by another sub-zero cold event on January 15-16, in which we saw more traditional variation, with –4°F to about 3-4 degrees above zero.

With temperatures this low, we can expect winter injury to be extensive, particularly on the most sensitive V. vinifera cultivars. Growers have been reporting 50-95% primary bud injury on Chardonnay and somewhat less on Riesling. A few growers reported split trunks. I would also expect some injury on hybrids, and perhaps more modest injury on labrusca varieties.

Natives. Also an issue with the late harvest and heavy crop is bud fruitfulness. Concord, Niagara, and Elvira had heavy crops that came off late, and very little time with active leaves following harvest. We would expect buds to be much less fruitful this year (think back to the low ’93 crop following cool ’92). Throw into the mix some level of bud injury, and chances are that crop level per retained bud will be lower this year. Does this mean that growers should leave more buds? Probably, but especially if your vines are cane pruned as opposed to hedged. Cane-pruned vines have fewer retained nodes (but generally higher quality buds), so when fruitfulness is reduced, their crop may be affected proportionally more. For those who mechanically prune (hedge), its more important to leave the right buds. With low fruitfulness, its even more important to pay close attention to leaving as many buds on top as possible. That could mean only using vertical cutters on the sides, and not trimming the top at all. In ’93, when a lot more vineyards were hedged, some growers trimmed close on top, removing most of their crop in the process.

**Injury Evaluation.** This is a good year to do some serious evaluations of bud mortality. We have published detailed instructions about cutting buds in previous years, and Bob Pool has an excellent guide to doing so posted on the internet. To find it, start at [www.fruit.cornell.edu](http://www.fruit.cornell.edu) and follow the links down to Bob Pool’s grape pages. Briefly: Cut canes to be examined and bring them inside for at least 24 h before examining. Place them in a bucket of water. Use a razor blade to make a cut about 1/2 to 2/3 of the way down the bud. You should be able to see the primary and secondary buds (See Figure). Healthy buds will be bright green; the center of injured buds will be asparagus colored green to black (depending on how recent the injury). Examine at least 100 buds, selected from representative sections of the vineyard. Examine several buds on each cane – a practical way to do so is to examine the first 10 buds from each cane. Sometimes this will reveal patterns of bud injury by node position.

Finally, if you have extensive bud injury (e.g in the 50% or greater range) it may be a good year to consider pruning lightly during the dormant season, seeing what pushes and adjusting shoot number after bud burst. You can always remove more shoots, but you can’t put them back on the vine.

We will have more extensive information about winter injury in future newsletters, at the Convention, and in future electronic crop updates.
Based on comments and questions following the talk on grape cane borer at the 2004 Finger Lakes Winter Meeting in February, we decided it would be helpful to get something out about cane borer in the newsletter before the field season gets rolling. Indeed, many of you may be discovering grape cane borer or borer damage in your vineyards as you complete your pruning this spring. As a quick reminder, GCB is a wood-feeding beetle in the family Bostrichidae. The larvae of this beetle feed on dead or sick wood of a variety of plants including grapes. Consequently, the immature stage is not explicitly the problem. Rather, it’s the adult beetle. In the fall the small brown beetles excavate round tunnels into grape canes (generally second year or current year wood) (figure 1) and remain there for the winter (figure 2). The tunneling can weaken the cane, and if missed at pruning, may crack or break during tying or produce poor growth during subsequent seasons. The tunnels are often difficult to see, especially when you have thousands of vines to prune. Historically, significant GCB problems have centered near Keuka Lake, although in the last few years we have been observing more damage around Seneca Lake. Current management recommendations are to apply an insecticide (only Imidan is labeled for NY for GCB) in the spring to try and kill adults before they have a chance to mate and lay eggs. However, this recommendation had not been very rigorously tested. So in the spring of 2002 we set up a trial to look at the impact of timing of insecticide application (2 inch shoot growth and/or two weeks later) and type of insecticide (Imidan 70W or Danitol 2.4EC). We won’t go into the details here but the upshot was that none of our treatments reduced GCB the following spring (2003).

What happened? We decided we needed better knowledge of the biology of GCB, especially regarding timing of mating and egg-laying and larval development. So in 2003 we identified 4 objectives focused on egg-laying and development: 1) Determine when egg-laying starts; 2) Determine what type of grape tissue eggs are layed on; 3) Determine where larvae go after hatching, and 4) Determine timing of pupation and emergence of adults. We were not fully successful in accomplishing these objectives but we did learn some new things that may help management. We found that significant egg-laying commenced at or before budbreak (early May of 2003) which is earlier than we previously had thought. One knowledgeable grower reported seeing many active adults in his vineyard on the evening of May 6, a day in which the temperature exceeded 70 degrees. Wood collected from this vineyard revealed numerous eggs placed under bark of older wood. Figures 3 and 4 shows the white-colored, oblong-shaped eggs on cane wood. Note that many of the eggs are actually laid underneath bark and hard to see. Needless to say, an insecticide would not likely be able to reach these eggs or the larvae. We placed some of the adult males and females collected in early May into a container with dead grape wood of different ages (1 year old, 2, or 3) and monitored egg laying. The vast majority of eggs were oviposited on 2 or 3 year old wood, placed beneath bark.

On one piece of older wood I observed about 12 eggs on a daily basis to determine egg-hatch. These eggs were probably laid around May 6 and all had hatched by May 14 when kept at an average temperature of 73 (F). Once hatched, the larvae appeared to feed for awhile on wood just under the bark but soon tunneled straight down toward the pith of the cane, leaving a small, round, sawdust-filled hole. Unfortunately, we did not get a photograph of the larva or its damage. We kept some of the larvae in the lab during the field season and adults emerged in early August. Figure 5 is picture of a pupa of grape cane borer. In the vineyard, we found adult GCB on dead wood on the vineyard floor in early September and in the grape canopy in middle September.

Although questions remain, we did learn some new things this year that may help us devise better management tactics. First, adults become active and started mating and egg-laying near budbreak, probably on warm evenings. An insecticide applied at this time and under warm evening conditions may help reduce populations in the area. The insecticide needs to be applied prior to significant egg-laying because the eggs are very well protected. Second, egg-laying occurs on older, dead wood. Thus, vineyards with excess dead wood in the canopy or under the vine may help promote higher GCB populations in the fall. Note that old prunings and dead trunks in burn piles should be destroyed before mid-July, thereby killing larvae before they have a chance to complete development. Third, emergence of adults occurs in the later part of summer and probably into the fall. Its tempting to suggest an insecticide treatment in the late summer would help reduce damage in the vineyard but this really needs to be tested. Emergence probably occurs over an extended time period in both the vineyard and in surrounding woods. A single insecticide application would likely miss many.

Where to now? For this field season we would like to investigate two management options. The first focuses on the timing of insecticide applications in order kill this past year, we believe the application needs to go on at or just before budbreak. Second, we would like to determine if doing a bang up job of clearing out old wood from the vines and vineyard floor would help reduce reproduction and populations of adults later in the fall.
Figure 1. Hole bored by grape cane borer adult

Figure 2. Adult within tunneled-out pith of live cane

Figure 3&4. Cane Borer eggs laid on bark

Figure 5: Pupa within cane in late summer.
UPCOMING EVENTS

May 13-14. Eastern Vineyard Soils Workshop in Pennsylvania. Cost: $100 per person for both days. $65 for either day. Registration deadline is May 6. After that, reg fee is $125. Includes handouts, lunches on both days, snacks and drinks. This will be a two day workshop. The first day will be classroom lecture and discussion, a chance to set a foundation for the second day, which will be a visit to two vineyards sites in SE PA. This will allow speakers to demonstrate and explain their ideas and theories in the field. A dinner is planned after the Wednesday meeting at Gibraltar for anyone who wishes to come. Cost is $50, payable at the restaurant. If you wish to come, please indicate so on the registration form. Please bring wines to share. Contact Alice Wise at 631.727.3595 for information and registration.

July 13. ASEV-Eastern Section Meeting Preconference tour. The tour will include southwestern Virginia wineries. See and discuss local adaptations to the environment.

July 14-16, ASEV-Eastern Section annual technical meeting and symposium, Roanoke, Virginia. The annual American Society of Enology and Viticulture Eastern Section meeting will convene at the Hotel Roanoke and Conference Center (www.hotelroanoke.com) to start with a 1.5 day seminar entitled Grapes, Wine and Environment (July 14-16). The underlying goal of the symposium is to explore how soils, climate (particularly temperature), and cultural practices affect fruit and wine composition and quality, especially in a warm, humid environment. Additionally, current research on vine nitrogen nutrition, including wine issues, and on canopy and crop management practices approach for less-than-ideal wine growing climates will be presented. For more information: http://www.nysaes.cornell.edu/fst/asev/