

# scaffolds

Update on Pest Management  
and Crop Development

F R U I T J O U R N A L

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Geneva, NY

ON  
DOCK

SIDE  
ENTRANCE  
(Art Agnello,  
Entomology,  
Geneva,  
[ama4@  
cornell.edu](mailto:ama4@cornell.edu))



This insect should not be confused with the related European apple sawfly, *Hoplocampa testudinea*, which has a whitish larva that lives and feeds in young apples, particularly prevalent in the eastern apple regions of N.Y.

❖❖ The dock sawfly always creeps in during this general period of the season. Following is a repeat of our annual write-up on this pest:

Before and during apple harvest in recent years, a number of growers and fieldmen are sometimes unpleasantly surprised by the appearance of neat little (2 mm) holes bored into the side of their fruit, similar in appearance to those caused by a stem puncture. Although graders sometimes attribute this damage to apple maggot or European corn borer, cutting open these apples reveals a bright green worm with a light brown head, 3 pairs of true legs and 7 pairs of prolegs, not feeding but lying inactive, in the burrow extending in from each hole. These are larvae of the dock sawfly, *Ametastegia glabrata*, a highly sporadic but nonetheless well documented apple pest that has been known to show up in our area since 1908.

Dock sawfly probably confines its feeding almost entirely to plants belonging to the buckwheat family (Polygonaceae), including numerous docks and sorrels, the knotweeds and bindweeds, or else wild buckwheat or alfalfa. In feeding on any of these plants, the larvae devour the leaf tissue and the smaller veins, eating out irregular holes in the leaves. Ordinarily, the midribs and the larger veins are untouched.

Injury to apples by the dock sawfly is known to occur generally in the late summer and early fall, when the fruit is approaching maturity and the sawfly is searching for an overwintering site. The greater hardness of immature apples probably deters the larvae from burrowing into these, so although 4 generations per year have been identified, only the last one or two are of concern to apple growers. The injury to apples consists externally of the small round holes bored by the larvae, which after a few days show a slightly sunken, brownish ring around them and occasionally may be surrounded by a larger discolored halo. These holes may occur anywhere on the surface, but are most numerous around the calyx and stem

continued...

## IN THIS ISSUE...

### INSECTS

- ❖ Dock sawfly
- ❖ Stinkbug monitoring

### GENERAL INFO

- ❖ Wayne Co. Fruit Tour
- ❖ Bird Damage Management Workshop
- ❖ Cornell Fruit Pest Control Field Days

### INSECT TRAP CATCHES

### PEST FOCUS

### UPCOMING PEST EVENTS

ends, or at a point where the apple touches a leaf or another apple, since it is easier for the larva to obtain a foothold here. Inside, the injury is usually more serious, since the larva often burrows to the core and usually hollows out a pupal cell somewhat larger than itself. Apples may have three or four, or sometimes even eight, holes in them of varying depths, but contain only one or two worms.

Since the dock sawfly does not feed upon any part of the apple tree, but must live on the above-mentioned succulent weeds, it becomes an apple pest only where these plants are growing in or around the orchard. There is little danger from this insect in orchards where the food plants don't exist. Likewise, the possibility of the larvae coming into the orchard from neighboring meadows, ditch banks, or roadsides is slight, for the larvae are incapable of finding their way over any extent of bare soil. The adults, though active, are not strong fliers, and it is not possible for the insect to travel far in this stage. Now would be a good time to assess the weed situation in your orchard and make plans for such selective herbicide applications as may be appropriate regarding this insect. Even though common wisdom says this sawfly is a pest only every 10–12 years, this is only an average estimation, and it's not a bad idea to anticipate the unexpected when hardly any season is considered to be "average".

(Information adapted from Newcomer, E. J. 1916. The dock false-worm: An apple pest. USDA Bull. 265, 40 pp.)



## WHAT STINKS?

### BROWN MARMORATED STINK BUG: FIELD CONFUSION

(Peter Jentsch, Entomology, Highland; Art Agnello, Entomology, Geneva; [pjj5@cornell.edu](mailto:pjj5@cornell.edu); [ama4@cornell.edu](mailto:ama4@cornell.edu))

❖❖ Recent drought conditions in the Hudson Valley have created conditions conducive to stink bug movement into fields and orchards over the past few weeks. Identifying key stink bug species is critical to making sound judgement for management decisions. There are two brown colored species that can easily be mistaken for brown marmorated stink bug (BMSB), *Halyomorpha halys* Stål.

One look-a-like seen in the field during the latter part of the season, easily confused with BMSB, is called the spined soldier bug (SSB), *Podisus maculiventris* (Say). We've seen this insect in the field last week and it should be recognized as a beneficial. The key in identifying the differences between the two lies in the shoulders of the in-

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### scaffolds

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Geneva, NY 14456-1371

Phone: 315-787-2341 FAX: 315-787-2326  
E-mail: [ama4@cornell.edu](mailto:ama4@cornell.edu)

Editors: A. Agnello, D. Kain

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sects. As the name implies, the spined soldier bug has a spine on each shoulder with a black band on the primary wings at the very end of the abdomen. The BMSB has rounded shoulders and is lacking a banded wing pattern.



(Dorsal view; spined soldier bug, *Podisus maculiventris* (Say); Photo Marlin E. Rice)

This predator is a medium-sized stink bug preying on a wide variety of arthropods, reported to feed on 90 insect species in over eight orders (DeClercq 2008), including several important economic pests. The prey of the SSB include the larvae of Mexican bean beetle, European corn borer, diamondback moth, corn earworm, beet armyworm, fall armyworm, cabbage looper, imported cabbageworm, Colorado potato beetle, velvetbean caterpillar, and flea beetles (Hoffmann and Frodsham 1993).

The 1st instar nymph of *P. maculiventris* has a blackish head and thorax and a reddish abdomen with black dorsal and lateral plates, similar to the BMSB 1st instar. BMSB first instars are colored with an orange or red abdomen,



(The 1st instar nymph of *P. maculiventris*. Photo by Michael R. Patnaude)

black head and dorsel stripes centered on the abdomen. They remain clustered around the egg mass, feeding on egg symbionts until they molt to the 2nd instar stage. Life stages of BMSB develop to an all black 2nd instar, proceeding to have striped antennae (3rd) and striped legs with shoulder spurs (4th) and wing pads (at 5th instar).



(BMSB Life stages)

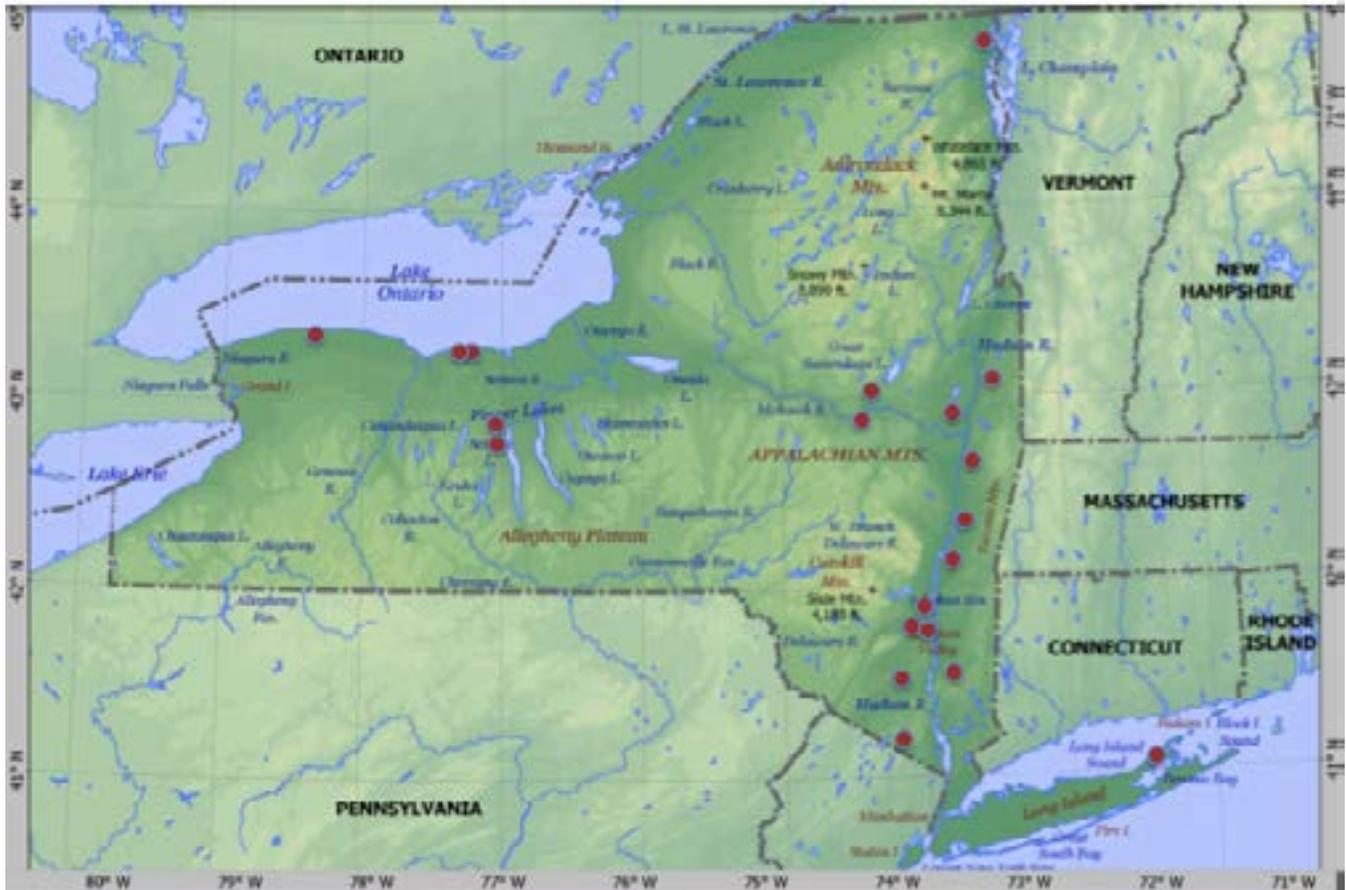
The brown stink bug, *Euschistus servus* (Say), another look-a-like, is equally confusing in its close resemblance to BMSB. Yet given its pest status as a fruit feeding stink bug, its presence in the orchard would also warrant management in the orchard. Under drought conditions, the bugs may attack fruit in high numbers. In peaches, stink bugs are also called catfacing insects. Feeding sites cause injured cells to stop growing, while healthy plant tissue continues to grow around the damaged tissue, resulting in deformities resembling a cat's face. See look-a likes at <http://www.stopbmsb.org/stink-bug-basics/look-alike-insects/#nbsb>.

#### Ag. Monitoring of BMSB

To determine the presence and potential threat of BMSB in NY's agricultural systems, pheromone-based trapping efforts have become the standard method to determine woodland edge populations. Cornell University faculty & staff, ENY Horticultural Program and CCE staff, in coordinated efforts, have monitored the pest since 2011. In 2015, county-based monitoring for statewide BMSB mapping includes 44 sites in 14 counties, with traps placed in tree fruit orchards and vegetable field edges (Image 4. 2015 BMSB Trap Sites). Trap captures of BMSB have been followed up by visual scouting along the perimeter rows of the orchards and field crop wooded edge. To view counties presently monitored for BMSB thresholds, visit <http://www.eddmaps.org/bmsbny/>.

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## NYS BMSB Trap Locations: 2014 Tree Fruit, Vegetable / Sweet Corn, Grape



We have seen an upswing in trap captures last week, with increasing numbers of 3rd through 5th instar nymphs, yet very few adults have been observed to date. However, we do expect, as in years past, to see increasing numbers of BMSB through August, when highest numbers of nymphs emerge and maturing adults feed intensively to prepare for overwintering in September, putting crops at greater risk.

During our trapping and scouting efforts this season, we have recorded the lowest adult numbers in Tedders traps since 2011. As with the pest com-

plex in general, the cold and prolonged spring may have taken its toll on BMSB field populations. To date, we have not seen BMSB in orchard trees or extensive fruit injury from the stink bug complex.



De Clercq, P., Wyckhuys, K. W., De Oliveira, H. N., and Klapwijk, J. K. 2002. Predation by *Podisus maculiventris* on different life stages of *Nezara viridula*. *Florida Entomologist* 85: 197-202.

Hoffmann, M. P., and Frodsham, A. C. 1993. *Natural Enemies of Vegetable Insect Pests*. Cooperative Extension, Cornell University, Ithaca, NY. 63 pp.

FRUIT  
TOUREVENT  
ANNOUNCEMENTS

WAYNE COUNTY FRUITGROWER TOUR  
Wednesday, August 5, from 9:30 am  
Registration and 1st stop at Wilbert's Fruit Farm, Walworth-Ontario Rd, Walworth, NY (GPS: N 43.160577, W 77.287325)

❖❖ Sponsored by agr.assistance, this large, informative and entertaining tour is in its 17th year, and will feature presentations on return bloom, pollination & crop set, frost control, apple scab and fire blight control, hard cider production, improving tree growth, black stem borer, plus much more. Door prizes, lunch, a light-hearted atmosphere, a BBQ/clambake dinner with a live band, growers and industry representatives from NY and surrounding states — always a great way to spend a midsummer day. Free attendance. Contact Lindsay LaMora (585-734-8904; [lindsaylamora@agrassistance.com](mailto:lindsaylamora@agrassistance.com)) for RSVP pre-registration and tour information.

BIRD DAMAGE MANAGEMENT  
WORKSHOP

Wednesday, August 19, 8:30 AM to 4:00 PM

Cornell University will be holding a bird damage management workshop on Aug. 19 at CCE-Saratoga County, 50 W. High St, Ballston Spa, NY, offering comprehensive knowledge about successful bird management strategies in susceptible fruit crops, including sweet and tart cherry, blueberry, Honeycrisp apples and wine grapes. Morning session topics: which bird species damage fruit, economic losses to fruit from birds, consumer preference for management tactics, NY grower survey, tactics for deer management, regulations & permitting for wildlife control, landscape factors that place fruit at risk, and bird mitigation strategies

(Morning session available via WebEx webinar). Afternoon session: On-farm field demonstrations of scare tactics such as falconry, air dancers, discussion of tactics being used on representative farms. Registration fee, \$10; advance registration is required by August 12. Contact: Marcie Vohnoutka, ENY Commercial Horticulture Program, 518-272-4210; [mmp74@cornell.edu](mailto:mmp74@cornell.edu). DEC credits are being requested.

CORNELL FRUIT PEST CONTROL FIELD  
DAYS

The N.Y. Fruit Pest Control Field Days will take place during Labor Day week on Sept. 9 and 10 this year, with the Geneva portion taking place first (Wednesday Sept. 9), and the Hudson Valley installment on the second day (Thursday Sept. 10). Activities will commence in Geneva on the 9th, with registration, coffee, etc., in the lobby of Barton Lab at 8:30 am. The tour will proceed to the orchards to view plots and preliminary data from field trials involving new fungicides, bactericides, miticides, and insecticides on tree fruits and grapes. It is anticipated that the tour of field plots will be completed by noon. On the 10th, participants will register at the Hudson Valley Laboratory starting at 8:30, after which they will view and discuss results from field trials on apples and other fruit crops. No pre-registration is required for either event.

## PEST FOCUS

Geneva: **Obliquebanded leafroller** 2nd flight began 7/30.

Highland: **Obliquebanded leafroller** 2nd flight began today, 8/3.

**San Jose scale** 2nd gen. biofix on 7/6. Crawler emergence expected August 1.

510 DD<sub>50</sub> accumulated since **codling moth** 2nd gen. biofix on 7/13.

870 DD<sub>50</sub> accumulated since **spotted tentiform leafminer** biofix on 7/6. Tissue-feeding mines present.

## INSECT TRAP CATCHES (Number/Trap/Day)

	Geneva, NY			Highland, NY		
	<u>7/27</u>	<u>7/30</u>	<u>8/3</u>	<u>7/27</u>	<u>8/3</u>	
Redbanded leafroller	0.2	0.0	0.0	Redbanded leafroller	19.1	0.0
Spotted tentiform leafminer	2.7	4.0	2.9	Lesser appleworm	0.7	0.6
Oriental fruit moth	0.8	0.2	1.1	Oriental fruit moth	0.6	1.6
Lesser appleworm	0.0	0.0	0.0	Codling moth	6.1	5.4
Codling moth	0.5	1.0	1.0	Spotted tentiform leafminer	24.5	35.6
American plum borer	0.0	0.0	0.0	San Jose scale	61.4	67.8
Lesser peachtree borer	0.2	0.7	0.5	Dogwood borer	3.9	4.4
Peachtree borer	0.0	0.0	0.0	Obliquebanded leafroller	0.2	0.9
Dogwood borer	1.3	2.7	0.8	Tufted apple budmoth	0.4	0.7
Obliquebanded leafroller	0.0	0.3*	0.6	Apple maggot	0.1	0.1
Apple maggot	0.8	0.3	0.4	Sparganothis fruitworm	0.0	0.0

\* first catch

## UPCOMING PEST EVENTS

	<u>43°F</u>	<u>50°F</u>
Current DD* accumulations (Geneva 1/1–8/3/15):	2220	1512
(Geneva 1/1–8/3/2014):	2240	1517
(Geneva "Normal"):	2384	1544
(Geneva 1/1–8/10, predicted):	2400	1643
(Highland 1/1–8/3/15):	2680	1894

<u>Coming Events</u>	<u>Ranges (Normal ±StDev):</u>	
Oriental fruit moth 2nd flight subsides	2066–2548	1377–1779
Oriental fruit moth 3rd flight begins	2288–2844	1550–1976
American plum borer 2nd flight begins	1557–2089	1029–1395
American plum borer 2nd flight peak	2005–2575	1351–1777
Comstock mealybug 2nd gen. crawlers emerge	2234–2624	1505–1781
Codling moth 2nd flight peak	1956–2722	1298–1884
Redbanded leafroller 2nd flight subsides	2177–2731	1467–1883
Spotted tentiform leafminer 2nd flight subsides	1994–2366	1316–1634
Spotted tentiform leafminer 3rd flight begins	2263–2647	1518–1838
Apple maggot 1st oviposition punctures	1605–2157	1144–1544
Apple maggot flight peak	2115–2655	1417–1837
Obliquebanded leafroller 2nd flight begins	2248–2640	1513–1827
San Jose scale 2nd flight peak	2137–2493	1440–1742

\*[all DDs are Baskerville-Emin (B.E.)]

NOTE: Every effort has been made to provide correct, complete and up-to-date pesticide recommendations. Nevertheless, changes in pesticide regulations occur constantly, and human errors are possible. These recommendations are not a substitute for pesticide labelling. Please read the label before applying any pesticide.

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